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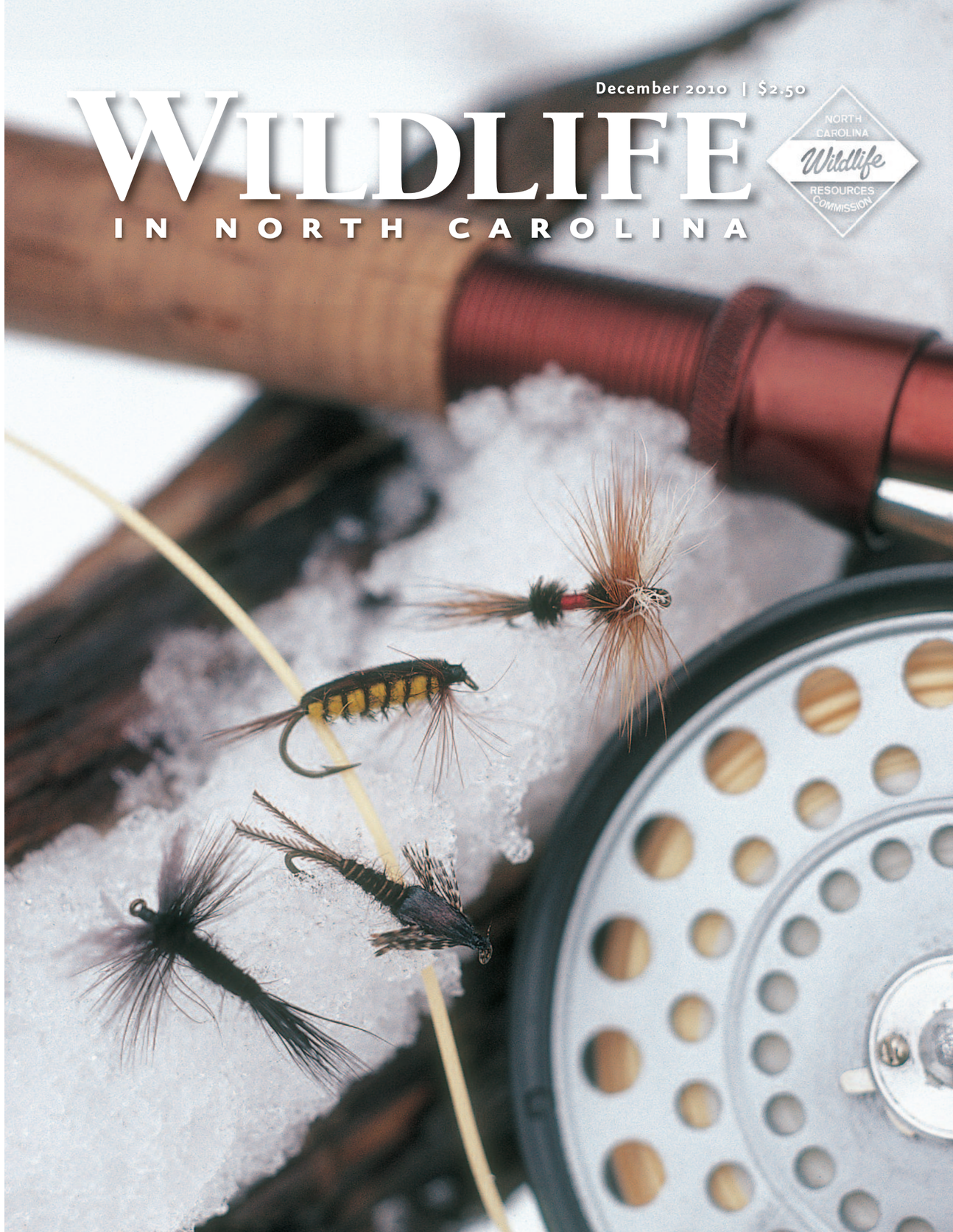
# WILDLIFE IN NORTH CAROLINA

NORTH CAROLINA Wildlife RESOURCES COMMISSION



Eastern tiger salamanders spend their first few months as aquatic larvae. They lose their external gills when they transform into juveniles of our largest terrestrial salamander. **PHOTOGRAPH BY TODD PUSSER.**

Volume 74 | Number 12

# WILDLIFE IN NORTH CAROLINA

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**Cover: The presence of snow on the ground doesn't mean it's time to put away trout fishing gear. A little season-specific knowledge can yield winter fishing success. PHOTOGRAPH BY JIM DEAN.**

*Wildlife in North Carolina* is the official educational publication of the North Carolina Wildlife Resources Commission. It is dedicated to the sound conservation of North Carolina's wildlife and other interrelated natural resources and also to the environment we share with them.

## EDITOR'S NOTE

Here at the magazine office, the distant past and the immediate future are on our minds. Next month, the volume number of the magazine will change to a milestone figure—75. In November 2011, *Wildlife in North Carolina* turns seven and a half decades old. Despite our advancing age, we still feel good about our mission to educate people about our state's unsurpassed wild natural resources. The magazine is more relevant than ever because of the critical need to deliver conservation messages to the masses.

However, our age is starting to show in a few different ways. With folks reading more and more on their electronic devices, magazines ain't what they used to be. The costs of paper and postage continue to rise each year. The state is grappling with another budget shortfall in the billions of dollars, and something's got to give.

State wildlife magazines have been struggling for at least the last decade. Only six other states still publish monthly magazines. A couple dozen more publish six times a year, and several others have moved entirely online. Most recently, *Louisiana Conservationist,* the wildlife publication of a state that calls itself "Sportsman's Paradise," ceased publishing in 2010 after 87 years in print.

As part of a special 75th anniversary issue we are working on for next November, we need to hear from you. *Wildlife in North Carolina* would have been nothing over the years without the steadfast support of its readers, so we want to make you part of our celebration—and our quest to remain relevant. Send us your favorite memories and stories about (and from) the magazine over the years, how you have shared *WINC* with others, how you use the magazine now, your suggestions for the future, and why you think the magazine is still relevant on its three-quarter-century birthday.

Send your e-mails to letters@ncwildlife.org with the subject line "75th Anniversary" or send regular mail to 75th Anniversary Letters, 1712 Mail Service Center, Raleigh, N.C., 27699-1712. We will accept letters until July 1, 2011.

Happy holidays, and we look forward to hearing from you!

Greg Jenkins

*Wildlife in North Carolina* (ISSN 0043-549X) is published monthly by the N.C. Wildlife Resources Commission, 1751 Varsity Drive, Raleigh, N.C. 27606. Periodicals postage paid at Raleigh, N.C. and additional mailing offices. Subscription rates: one year $12, three years $30. All foreign subscriptions are $28 per year. Payable by U.S. Postal Service money order or U.S. bank cashier's check. All orders must be prepaid. Please allow 6 to 8 weeks delivery on new subscriptions and address changes. POSTMASTER: Send address changes to Circulation Manager, 1710 Mail Service Center, Raleigh, N.C. 27699-1710. Address all correspondence regarding subscriptions to Circulation Manager. For subscription help, dial 1-866-945-3746. Articles in *Wildlife in North Carolina* may represent the personal views of authors, and do not imply endorsement by the N.C. Wildlife Resources Commission. *Wildlife in North Carolina* is available on audio cassette through the Department of Cultural Resources, Library for the Blind and Physically Handicapped, Raleigh, N.C., (919) 733-4376. **The N.C. Wildlife Resources Commission is an equal opportunity agency.** 



WILDLIFE IN NORTH CAROLINA

DECEMBER 2010 VOLUME 74, NUMBER 12



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## Good Dog!

"Requiem for a Retriever" (Oct. 2010) was so awesome and well written! It really touches the heart for all of us who have loved and lost a good dog. There is nothing any sweeter than a dog that has retrieved birds, worked hard and earned her right to sleep on a pillow with the occasional rib eye thrown in, just for good measure!

*Tina Kuykendall*
*Harnett County*

I'd be grateful if you could pass along my thanks to Shari Smith for her wonderful story about sweet Kate ("Requiem for a Retriever"). It was so beautifully from the heart and it certainly touched mine. Please tell her that I carry her in my heart and in my prayers with the hope that Kate will be quick to send someone to fill the void and shower the love.

Victor DeBelle said it so beautifully in his essay, "Silver Cargo Special": "For it is said that those who love beyond the heart and to the very soul have found true love that bonds two souls for all times. Those souls, no matter how far or how long time goes, will always be as one. Someday angels will make another special journey placing that little soul of bright silvery light back in loving arms."

*Pat O'Connor*
*Winston-Salem*

Shari Smith brought a tear to my eye with her story "Requiem for a Retriever." I'm sure many dog lovers joined me in that emotion. There's nothing better than an a loyal, smart, loving dog.

She nailed it beautifully.

*Susan Buff*
*Lincolnton*

## Cute vs. Creation

As usual, when I received my October issue of *Wildlife in North Carolina*, I quickly flipped through it to get to Jim Dean's "Our Natural Heritage." I've been a big Dean fan for nearly 20 years and relate to much of what he so winsomely shares. Overall, "When Cute Eats Cute" was an excellent article. However, I disagree with his reference to humans as animals. As someone who believes God's Word (the Bible) to be our source of ultimate truth, the Scriptures clearly state that mankind is made in the image of God (Genesis 1:26–27) which sets us apart and above the rest of His creation, and accountable to Him. It also debunks the notion that "concepts of morality . . . are entirely human-inspired contrivances."

*David Swicegood*
*Ponte Verda Beach, Fla.*

I almost skimmed "When Cute Eats Cute" instead of fully reading it. My thought was, "This is about another state. Why is it being published in *Wildlife in North Carolina*?" Well! I am very glad that I carefully read it. The article is interesting and beautifully written.

*Patricia Pepple*
*Viera, Fla.*

## Herd's the Word

I enjoyed "Herd Mentality" in the October 2010 issue. Having such a high-profile wildlife success story enhances the appreciation of North Carolinians for our natural resources. This will be essential for the future, as our population and resultant pressures on wildlife, open space and quality of life continue to grow apace. The article reminds us once again that we do not inherit our natural treasures from our fathers, but rather borrow them from our children.

*Jonathan Maxwell*
*Greensboro*

## Love that Mag

I've subscribed to *Wildlife in North Carolina* for many years. It is such a great magazine that I look forward to getting each month.

I especially enjoy the variety of subjects covered. The photographers and writers do a great job. Keep up the good work.

*D.T. Thomas*
*West End*

## Squirreled Away

***After perusing "Hunting the North Carolina Squirrel Slam" in the October 2010 issue, a few readers wrote to remind us that there are more than three squirrel species in our state. Indeed. In addition to the game species covered in the article—gray, red and fox squirrels—there are three members of family Sciuridae that are not legal to hunt in North Carolina. The Eastern chipmunk and the Southern flying squirrel are common, abundant squirrel species. Chipmunks are found in the Mountains and Piedmont, while the Southern flying squirrel is distributed statewide. The Northern flying squirrel is a rare and endangered creature of high-elevation Mountain forests.***

***The seventh and final member of North Carolina's squirrel family is its largest. The groundhog (also known as woodchuck and whistlepig) lives in the Mountains and the northern halves of the Piedmont and Coastal Plain. There is no closed season and no bag limit on groundhogs, so one could argue that any "squirrel slam" would have to include one of these animals.***

## We want Your Feedback

Do you have a comment about content in *Wildlife in North Carolina?* Questions about something you read or have seen? Send us an e-mail at letters@ncwildlife.org.

## write us

*Letters should be sent via e-mail to* **letters@ncwildlife.org** *or through regular mail to Letters,* Wildlife in North Carolina *magazine, 1712 Mail Service Center, Raleigh, NC 27699-1712. Please include your name, address and daytime phone number. Letters chosen for publication may be edited for clarity and length.*

# For Wildlife Only

**Landowners can now receive tax breaks for managing their land for wildlife—no moneymaking enterprise necessary.**

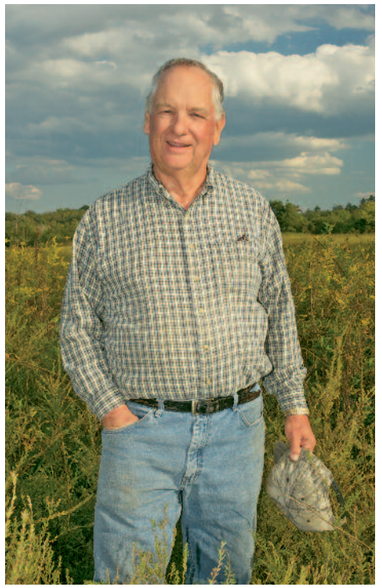
The yearling buck does not bother to move when we park just a few feet away. He merely watches us from his bed in the tangle of briars, seemingly unafraid of the Gator with the dog box on the back. At least twice a week, the green utility vehicle follows a pack of yipping, yelping beagles as they chase rabbits around this field of thick vegetation. Today the dog box sits empty, the small hounds having gotten their exercise a day earlier. Ron Little cuts the engine, and everything goes silent. Almost everything.

"I heard one whistle then. Hear it?" Little asks, cocking his ear toward the sound. As if on cue, another bird calls out. Then somewhere across the field, from a patch of ladino clover or knee-high lespedeza, comes a proud answer. And so it continues, back and forth like an old-time gospel refrain during altar call. A once-common song of the South that greets Little nearly every morning during mating season. The unmistakable rising whistle of wild bobwhite quail.

**written by Shannon Farlow  photographed by Melissa McGaw**

Landowner Ron Little talks with N.C. Wildlife Resources Commission biologist Ken Knight on Little's property that he is managing for wildlife. Little's early successional plantings have increased populations of Eastern cottontails and Northern bobwhite quail.

MASLOWSKI WILDLIFE PRODUCTIONS



MASLOWSKI WILDLIFE PRODUCTIONS

**According to the N.C. Department of Commerce, North Carolina's population is growing by almost 10 percent annually, which is twice the rate of the rest of the country.**

"There's probably two or three coveys," Little says, looking out across the lush landscape. "They're whistling the most this year that I've ever heard them."

Little was born on this Union County farm and, except for a military stint in the late 1960s, has lived here all his life. The quail and rabbits have always been here, too. But as he watched their populations decline elsewhere across the Carolinas during the '70s and '80s, and as he lost his favorite hunting spots one by one to development, the avid rabbit hunter became determined not to let the wildlife on his land suffer the same fate.

In 1988, Little transformed approximately 46 acres behind his home into a small-game sanctuary where he could train and exercise his beagles. So began his long-term experiment to learn firsthand which types of cover and food produce the most birds, bunnies and other small game.

Since rabbits and quail are both early successional species that require lots of ground cover, Little sowed a variety of grasses and clovers interspersed with small annual food plots. To maintain the early successional stage, he plows half of the 46 acres with a disc harrow in February or March and rotates to the other half the following year. Sweet gums and other tree saplings that will eventually crowd out low-lying vegetation are removed by hand with herbicides.

"It's not a cheap thing. It's not a lazy-man thing because you've got to keep it up," says Little. Since his retirement from an aluminum foundry in 2009, he has been busy "keeping it up." So when he recently received a notice that his property tax was increasing, threatening to dampen his efforts, Little went to see the tax man. "They told me I could go into forestry or start farming it. I told them farming it ain't an option."

To his surprise, Little had another alternative — the newly implemented North Carolina Wildlife Conservation Land Program. Thanks to the efforts of the N.C. Wildlife Resources Commission, the N.C. Wildlife Federation and other conservation groups that worked to get the legislation passed in the N.C. General Assembly, landowners who manage for threatened wildlife or certain wildlife habitats can now qualify for a lower property tax assessment. If the land meets criteria set by the General Assembly and the owner signs a Wildlife Habitat Conservation Agreement to manage for wildlife, then the property can enter the Wildlife Conservation Land Program (WCLP) and be taxed at a reduced rate.

"For the first time ever, wildlife habitat is recognized as a valuable asset to everyone in North Carolina," says Brad Howard, private lands program coordinator for the Wildlife Commission. "Landowners who agree to manage those habitats that we've identified as priorities deserve some type of recognition for doing so. This program provides that for them. And it provides recognition for the wildlife and the natural resources of the state. We're excited about it."

Before the WCLP went into effect on Jan. 1, 2010, only private landowners engaging in agricultural, forestry or horticultural production were eligible to receive a reduced property tax assessment through North Carolina's present-use valuation program. Landowners who wanted to utilize their property for wildlife conservation were simply out of luck when it came to tax relief. In fact, property owners enrolled in the present-use valuation program were penalized with a higher property tax if they quit farming or producing timber and started managing for wildlife. Conservation was costly. The lack of any property tax incentive was a major stumbling block for the Wildlife Commission and conservation groups such as land trusts when they tried to encourage private landowners to preserve open spaces and wildlife habitat. (See "With What Time Remains," Oct. 2010.)

### Getting Crowded

According to the N.C. Department of Commerce, North Carolina's population is growing by almost 10 percent annually, which is twice the rate of the rest of the country. We're currently ranked 10th in the nation with almost 9.3 million people — 190 people per square mile.

"The biggest threat that wildlife and wildlife habitat face is people coming here in greater numbers and building roads and houses and businesses. There's just not as much wildlife space left," says Chris McGrath, coordinator of the Wildlife Commission's Wildlife Diversity Program. "It's under pavement or buildings or turned into things that aren't habitat for wildlife anymore, and that's going on every day. It's just gone, and we're never going to get it back."

Almost a decade ago, a committee of Wildlife Commission biologists began assembling data in an attempt to map out a viable strategy for sustaining the state's wildlife habitat and open spaces. The biologists formed descriptions of habitat types they considered the most threatened in North Carolina. They combined these with the inventory of animals from the state's list of protected wildlife species to create the state's Wildlife Action Plan. The General Assembly took that information, crafted a bill identifying six of those habitat types and all of the species, and voted it into law in 2008, forming the Wildlife Conservation Land Program.

To enroll in the WCLP, landowners must first have their property evaluated by a representative from the Wildlife Commission to see if it meets the requirements. "We do not provide actual physical work on their property," Howard explains. "Our job is to tell them what they should do, make suggestions, give them advice as to what they should do to help wildlife. We can assist them in developing this Wildlife Habitat Conservation Agreement, and we will help

### WCLP Requirements

Landowners wanting to participate in the Wildlife Conservation Land Program must

- Own 20 to 100 contiguous acres of qualified habitat in one county.
- Have owned the land for at least five years or purchased property that was already in a wildlife conservation land program. Landowners can move their property from a present use valuation program to the WCLP without any penalties provided they have owned the property for five years.
- Sign a Wildlife Habitat Conservation Agreement with the N.C. Wildlife Resources Commission.

**For more information, visit** www.ncwildlife.org/wildlife_species_con/wsc_land_program.htm or contact Brad Howard with the Wildlife Commission at (828) 294-2605.

**More people usually means fewer open spaces and less wildlife. The effects of human development and sprawl are far more permanent for wildlife than those left behind by any hurricane or oil spill.**

them identify if, in fact, they do have qualifying habitat."

There are two ways landowners can qualify for the WCLP. The first is by conserving one or more of the wildlife habitat types listed in the Wildlife Habitat Conservation Agreement: bat cave, rock outcrop, small wetland community, stream and riparian zone, early successional or longleaf pine forest. The landowner must possess at least 20 adjoining acres of one of these types of habitat, or a combination of these habitats, to be eligible. Each category comes with specific requirements to be considered qualifying habitat. But they all have one thing in common.

"You have to be active in promoting and keeping up your habitat," says Howard. "It's not an idle land program. It's an active management program." Landowners applying for WCLP status must show that they have been actively managing that type of habitat for at least three years. With more than two decades of management history, Ron Little's land was easily accepted into the WCLP.

"The process for me wasn't any problem at all," says Little. "I just had to fill out some papers, and [the biologist] put in the coordinates on his GPS and wrote down all the types of cover that we had. You can't find any better people to deal with. They're just willing to do what they can to help you."

The second approach to qualifying for the WCLP entails land that protects at least one of the many wildlife species recorded as endangered, threatened or of special concern on the state's list of protected wildlife species, such as the Northern flying squirrel, several species of bats and the red-cockaded woodpecker. "To our knowledge this is the first or one of the first programs like this in the country that actually recognizes nongame wildlife species and rewards the landowner for managing for nongame priority wildlife species," Howard says. "For the first time, these animals actually have a value other than just the intrinsic value. Now these things actually have an economic value."

Landowners must present three years' worth of documentation, such as photos, to prove that the species maintains a stable existence on their property and that they are managing the required habitat. This can be the most difficult part of the process.

## Gathering Evidence

"One species that's found here is called the mole salamander (*Ambystoma talpoideum*)," says Ann Berry Somers, as she takes a break from cutting down tree saplings. "My son and I collected the largest one ever found of the whole species in 1991, and that's become a voucher specimen in the state museum. But you can't just have a record from 20 or 30 years ago. In order to qualify for the [WCLP], it has to be active habitat."

When Somers and her husband first bought their property on the outskirts of Greensboro in 1980, one of the natural features she was most excited about was a low-lying area, about an acre in size, just below where they planned to build their home. A creek ran through the center of it, and it occasionally flooded. "I thought, 'Oh, wouldn't it make a good site for a pond,'" says Somers, who teaches conservation biology at UNC Greensboro. After examining the area, she recognized the biological significance of the wetland, which was home to multiple species of salamanders. Somers scrapped the pond and saved the salamanders.

Since then, overgrowth of the forest canopy has begun altering the wetland. Elms and sweet gums prevent sunlight from reaching the wetland floor, stunting the growth of smaller flora that the salamanders depend on. The trees also remove too much moisture from the soil. As a remedy, Somers began a selective elimination, picking out the most damaging trees and axing or girdling them.

To help offset the expense of a professional's removing the larger trees, Somers decided to enroll the property in the WCLP. "The tax break is going to help me cover that cost," Somers says. "I'm not going to end up with more money, but I'll end up with better habitat."

In addition to the wetland, the salamanders need the surrounding upland forest, where they spend most of the year, to survive. With 1 acre of wetland and 20 acres of surrounding upland forest, Somers met the size requirement for the WCLP. She just had to provide a record of existence for the salamanders. Two of the species that live in Somers's wetland — the mole salamander and the four-toed salamander, which Somers found in 2010 — are listed as special concern species. "It's hard when you're dealing with such a cryptic species as we are here. To think you can just go out in a year and get a record, you can't," said Somers. "But we were able to this year, so that was very exciting."

After eligibility has been confirmed by a Wildlife Commission representative, landowners are required to sign a Wildlife Habitat Conservation Agreement. Once that is complete, the role of the commission is essentially over. The landowner must present the agreement to the county tax office to complete the process. If a landowner fails to maintain the management strategy as spelled out in the Wildlife Habitat Conservation Agreement, then the county tax assessor will enforce noncompliance penalties.

"You have to stay in compliance with the rules of the program. If you don't, then you're going to have to pay three years of back taxes," Howard says. "We stress to the landowners that if you're going to do this, you better commit to do it."

All indicators and statistical models consistently suggest that immigration to the Tar Heel State will continue at a record pace. And who can blame others for wanting to move here? But more people usually means fewer open spaces and less wildlife.

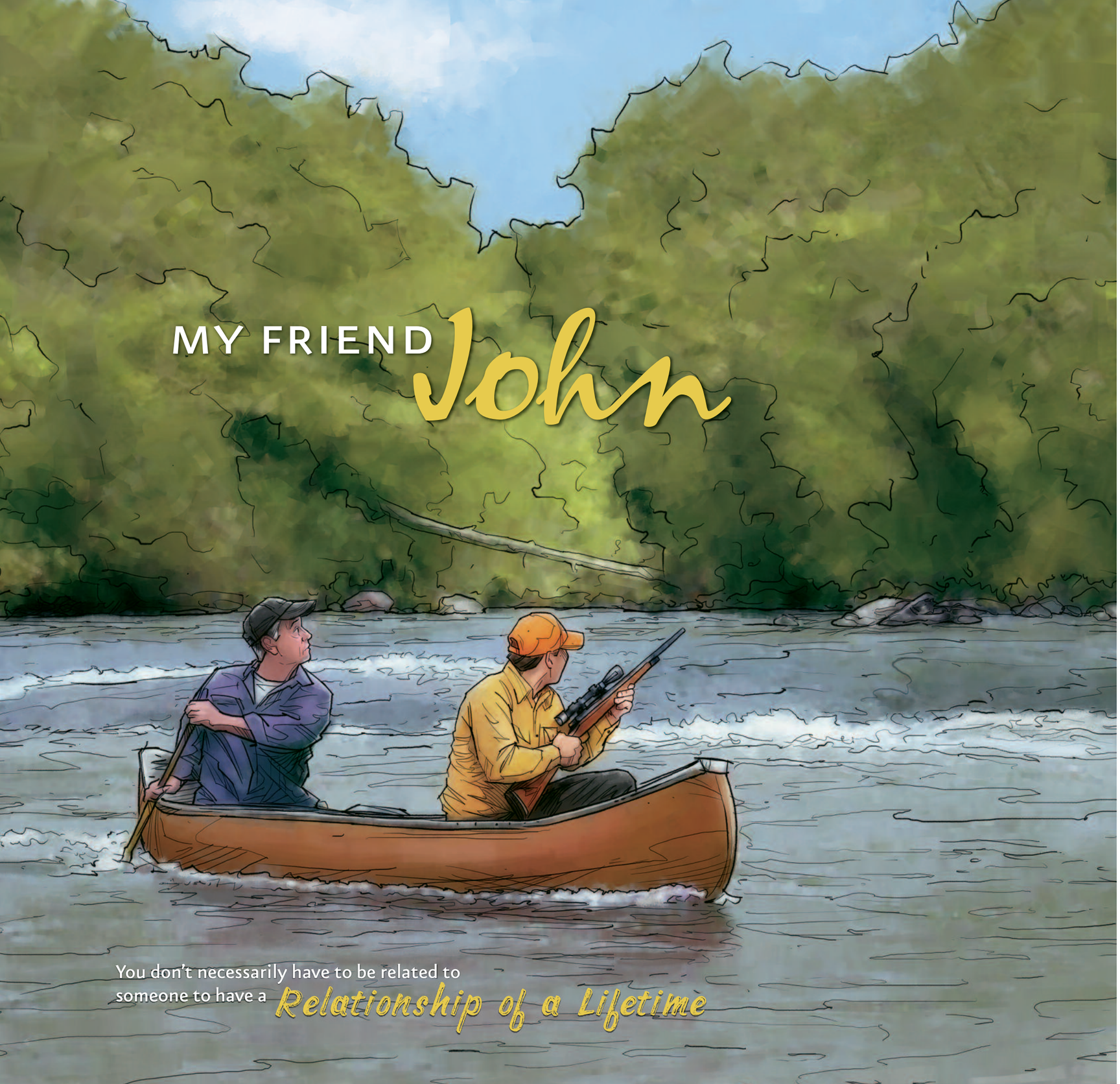
The effects of human development and sprawl are far more permanent for wildlife than those left behind by any hurricane or oil spill. There are no huge government agencies rushing in to remove housing developments and strip malls located on former wildlife habitats.

"We can't stop it. We will never stop it. It's the nature of our state, the nature of this country that we live in," says Brad Howard. "But if we can allow some of the rural lands in this state to stay rural for just a little longer, that would be a very positive thing. I would like to leave some green space green for as long as we can. This program is attempting to do that." ◆

---

*Shannon Farlow is a writer living in Asheboro. This is his first article for* WINC.

**Ann Berry Somers uses the Wildlife Conservation Land Program to assist her in the management of her wetland property that hosts numerous amphibians such as the tiger salamander. Wildlife Commission biologist Jeff Humphries has no problem locating wildlife on Somers' property.**




WRITTEN BY Jeremy Grady ILLUSTRATED BY Joe Mahler

I didn't know either of my grandfathers. One of them passed away a year before I was born, and the other died a year later. But sometimes, people's lives cross and lifelong friendships form. I was blessed with such a relationship that began many years ago, and it turned out to be what I would imagine as grandfatherly.

It all started when I was working at a downtown hardware store. I was fresh out of high school, working full-time and not going to college. I wasn't close to either of my parents, living on my own in a rebellious sort of way, like a lot of other people that age. My job consisted mostly of stocking shelves, assembling everything from grills to tricycles, delivering appliances and doing whatever odd jobs needed to be done. In a corner of the hardware store was a sporting goods department run by Bill Crites. At the end of the day I would hang out there, filtering through the various lures, tackle and rods.

Bill had some flies in large, clear plastic boxes on the glass counter. The boxes needed restocking, so I asked him if I could tie some flies in trade for merchandise. Bill agreed, and over time I got the boxes restocked. Meanwhile, I was spending more and more time in sporting goods and started meeting some of Bill's clientele.

One day a friend of Bill's, an older gentleman named John Collins, came into the store looking for naval jelly. I had never heard of the stuff, much less knew if we had it. (Turned out naval jelly is a brownish orange gelatinous substance that's used to remove rust.) Bill told me what aisle, how far down the aisle and what shelf it was on, so I went exactly where he directed, found it and brought it back to them. John cracked a joke about how the stuff was used to remove lint from your belly button. Bill and John burst out laughing. I was introduced not only to John Collins but also to his witty humor and cackling laugh. Bill told him I was a new employee and pointed out the flies.

After that day, I waited on John every time he came into the store. One day he called me and offered a trade. He offered me some barred lemon wood duck feathers in exchange for some small deer-hair panfish poppers. To fly-tiers these feathers are like gold. They're commonly used for wings on dry flies because of their coloration, and they have natural oils that help them to repel water. I could not pass this up. I tied the flies, and we made the trade. He later took them on a float trip on the South Fork of the New River and fly-fished for rock bass and smallmouth bass. John reported to me that he had very good luck.

The following fall, he brought me some deer tails, which are commonly used for tying flies. Anything from tails on dry flies to bucktail streamers, bucktail jigs and the world famous Clouser minnow can be made with deer tails, or bucktails as they're often called. After he brought the tails, I commented that I didn't know the first thing about deer hunting but would be interested in giving it a try. He didn't say anything at first. But about an hour after he left, he called and offered to take me on some game lands and show me what to look for. We chose a date, and we went.

John explained that white-tailed deer are ridge runners and showed me where to look for trails and various signs. We picked out trees that would be good for a climbing tree stand, and he shared stories about how buck deer act as they slowly walk into range. Not many people would have called some kid out of the blue and offered their time and years of experience. Later, John would go with me to various lands that I had access to and help determine the best stand sites. Most people seriously guard their deer hunting secrets, but I would ask John, and he would share as much as he could. Also, I would help him do tree stand maintenance, and he would always say, "The winter is the best time to do any kind of tree stand repairs and cutting trails."

*We ended up catching white bass walleye and even a rainbow trout But catching a sh wasn t required to have a good time because I so enjoyed his company*

During deer season, John and I talked every night and compared notes. It seemed like every day of the season he was seeing deer, but I wasn't seeing anything. Oftentimes, he would call me to help drag a deer that he harvested. Then one day he and I both harvested four-pointers. I got my deer in the morning; he got his that evening, and I helped him drag it out.

When I started deer hunting, I didn't have a rifle or clothes. So I borrowed a rifle from my dad. Eventually, Dad, my brother Jason and I started hunting together. The times spent together scouting and target practicing, and the wonderful memories made, helped heal a once-strained relationship. This progress was sparked by John's encouragement with deer hunting.

My first introduction to floating and fishing a river from a canoe came on the Catawba River above Lake James. John loved canoeing. He called me at home one Friday night in mid-April and asked if I would be interested in fishing for some white bass the next day. I could not pass up such an opportunity. The next day he stopped at my house, and I followed him up to the take-out place, then we proceeded to the put-in place. That day he put me in the front of the canoe and told me to start fishing while he was in the stern paddling and steering. We ended up catching white bass, walleye and even a rainbow trout. But catching a fish wasn't required to have a good time because I so enjoyed his company.

We also floated and fished Johns River. I would toss a popping bug to the bank for bass and panfish. John would sit in the stern and throw a gold Rapala or orange Beetlespin. I remember a nice smallmouth that snatched a popping bug one day while we were floating Johns River. When I set the hook, it really just made the fish mad. The fish jumped three times, and after the third jump, it made off with my fly. I looked at John. I didn't have to say a word. He replied, "I guess you know . . . when they take your lure, they have it mounted and put on their wall." It seemed like he always knew what to say when we missed a fish or a deer.

We even squirrel hunted out of the canoe. I had never really thought of squirrel hunting that way. But if the bottoms surrounding the river have cornfields, then using a canoe can be an excellent way to pursue the animals.

The only time I actually fished and hunted during the same trip was a day he took me down Johns River. When I wasn't holding a shotgun, I was casting a gold Rapala. We caught fish, harvested a few squirrels and had a wonderful time.

In later years we went fishing in my bass boat. Finally, John didn't have to paddle to keep me in position—we just let the trolling motor do the work. In the early spring we would fish for white bass and smallmouth. In the summer we fished popping bugs for bluegills. John loved to eat fish, and I always wanted to help him catch a mess.

John had a wonderful sense of humor and was an excellent storyteller. He would tell me stories of his time as a bear biologist for the N.C. Wildlife Resources Commission, in the Air Force and as a student at N.C. State University. One of the things I noticed was that we could sit and talk about anything. There were times he would visit my house or I would visit him, and we could sit, laugh, talk and just plain hang out, which was cool.

Many times while telling his stories, John would get to laughing, which would make me start laughing too. All of his stories had a purpose. One of the funniest times we shared was when I tried chewing tobacco. John took me and my brother Jason to the Dixie Deer Classic, where we got some free samples of chewing tobacco. I didn't chew tobacco (and still don't), but on the way back home I started smelling the stuff. He suggested, "Why don't you put a big clump of tobacco in? See how you like it, but don't swallow the juice." I grabbed a big pinch and put it in my mouth. Within seconds my head began to spin and my stomach started to roll. I spit the mess out. John laughed at me so hard his face turned beet red and he could hardly talk.

This past fall, I purchased a trail camera. It was fun and interesting to see what animals roamed the areas we were hunting. Once a week I'd check the camera, download the photos and call John to share with him what we had. We got photos of deer, turkeys, foxes, raccoons and even a black bear. Being a retired bear biologist, John loved the bear photos. I told him that if he got a camera, we could use my computer to look at the photos. So he did, and he got some nice pictures of animals too.

One Saturday morning he came over to download some photos. He brought my daughter, Maddie, a small chocolate candy bar and a book titled "The Three Little Pigs." My little girl was elated at the gifts. After looking at the photos on the computer, we took some pictures of John and me. I had never had a photo of him and me together; it was just something that I had the urge to do. We also snapped photos of John holding Maddie, and he was tickled to have a picture with her.

One morning several days later, my brother called me with very disturbing news: John had drowned the day before in a canoeing accident. He was floating Johns River while squirrel hunting with a friend when the accident occurred. My world seemed to stop. John had been at my house just a few days before looking at the deer photos. In a couple of weeks, we were going to hunt and compare notes every night. I had floated many trips with him in a canoe and had probably done the very same float when we hunted squirrels. I didn't know what to think.

How ironic it was that he died in a canoe accident on a river where he fished, hunted the bottoms for deer and worked trapping ducks. He loved Johns River as if it had been named after him. Knowing John, and his passion for life and the outdoors, I don't think he would have had it any other way. At the service prior to his funeral, there wasn't an empty seat. Numerous people spoke of John's gentleness, kindness and unmistakable laugh. He knew people all over the state and no doubt would be missed.

I didn't know whether I would even hunt that fall. But I remembered that a few weeks earlier, when we were looking at photos of two exceptional bucks, he had told me, "Son, you better be in that stand waiting on one of those dudes come that first Monday of rifle season." Knowing John as I did, I thought he would have wanted me to hunt, so I did. I spent a lot of time on my stand thinking about him. There were places in the woods where I could see us trimming limbs for shooting lanes.

John loved family, friends, wildlife and life. He was one of the happiest people I have ever met, and he loved to share his laughter and humor. If you were having a bad day, a talk with him made it seem not so bad. I don't know why he took such an interest in me. Maybe it had a lot to do with how good-natured he was. Whatever the reason he chose to take me under his wing, he was a wonderful person to fill the grandfather role for me. I am just grateful that our lives intersected one day in that hardware store. ◆

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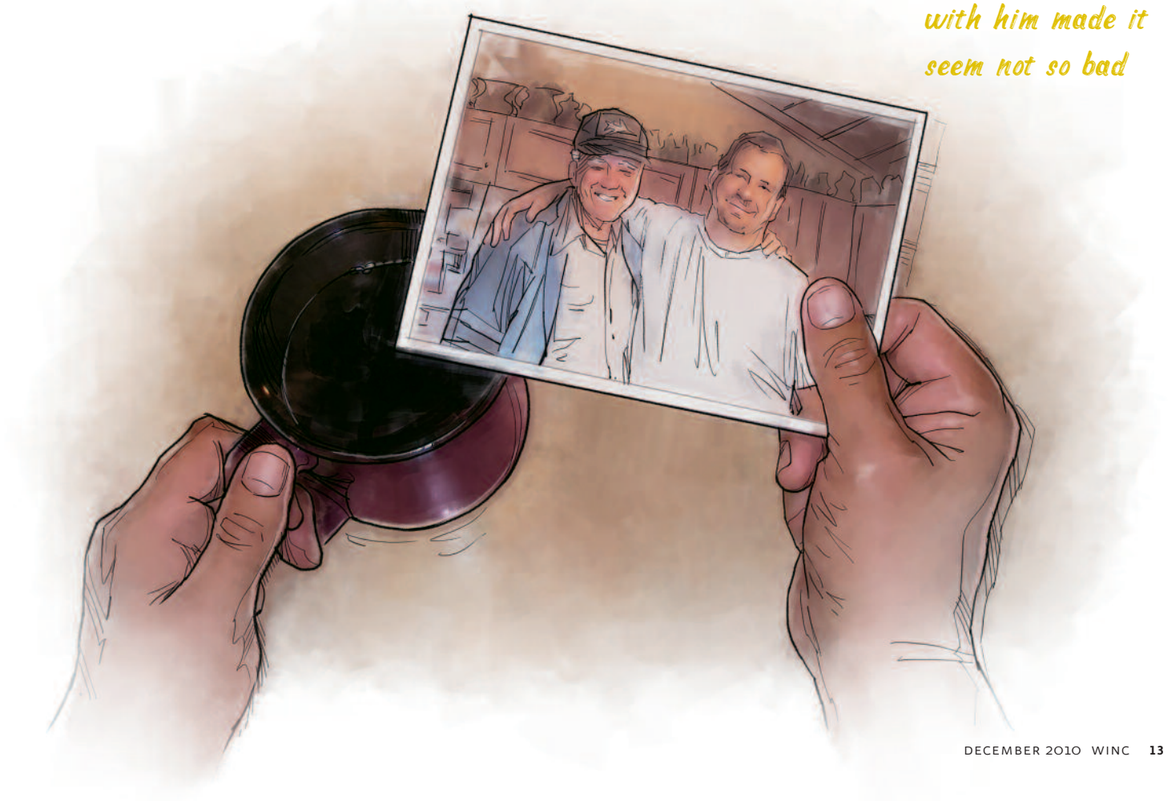
*Jeremy Grady is a freelance writer living in Morganton and a regular contributor to* WINC.

*John loved family friends wildlife and life He was one of the happiest people I have ever met and he loved to share his laughter and humor If you were having a bad day a talk with him made it seem not so bad*



# A BREED ★ APART

Written by Bob Plott

## THE PLOTT HOUND IS TENACIOUS, INTELLIGENT, FAST, VERSATILE, AND ENTIRELY DESERVING OF ITS STATUS AS NORTH CAROLINA'S STATE DOG.

NORTH CAROLINA STATE ARCHIVES

More than 250 years after its arrival in America, the Plott bear hound continues to command respect as the world's best big-game hunting dog. The breed is undoubtedly more popular today than at any other time in its illustrious history — and for good reason.

An Internet search for the Plott hound produces more than 300,000 different entries with information relating to the breed or pertaining to clubs, services and kennels. No fewer than seven states — including North Carolina — have formal bear hunting organizations that are devoted to preserving the heritage of bear hunting with hounds. There are at least two national clubs devoted entirely to the breed and eight more clubs that are dedicated to hunting with Plott hounds in some capacity. In addition, several different magazines published monthly or annually concentrate — at least partly — on big-game hunting with Plott hounds.

These numbers pale in comparison to the massive growth of the sport of raccoon hunting with Plott dogs. Almost every state in the Union now has some form of state and/or local club promoting coon hunting with hounds. The American Kennel Club (AKC) alone held more than 1,400 coon hunting competitions last year, and the United Kennel Club (UKC) three times that number, many of them in North Carolina.

In addition to its reputation as a hunting dog, the Plott hound was also formally recognized by the AKC as a show dog in 2007. And in 2009, the 20th anniversary of the breed's designation as the official state dog of North Carolina, the Plott hound was honored with its own state historical marker in Waynesville.

Other 2009 accolades for the breed included an exhibit at Western Carolina University's Mountain Heritage Center devoted entirely to the Plott hound. After a six-month stay in Cullowhee, the exhibit traveled to the Museum of the Albemarle in Elizabeth City, and it is scheduled for stops in Raleigh and Old Fort in 2011.

Yet despite these recognitions and ample documentation to support them, many Plott hound enthusiasts remain confused about the actual history of the breed. The most common misconception is the mythical story of old Jonathan Plott and his dogs.

Johannes "George" Plott — my great-great-great-grandfather — is generally (and correctly) recognized as the American patriarch of the breed. According to family legend, he arrived in North Carolina from Germany with five of his father's prized hunting dogs around 1750. These dogs, reportedly three brindle-colored and two buckskin hounds, were the foundation stock of the Plott breed. Yet, contrary to popular belief, Johannes Plott never lived any farther west than what is now Catawba County, where he died in 1810. He probably hunted in the Mountains, but he never lived there — nor was his name Jonathan. Nevertheless, the myth persists regarding old Jonathan Plott and his legendary Mountain Plott hounds.

Henry Plott, the son of Johannes Plott, was my great-great-uncle. Henry did indeed take the first Plott dogs to the mountains of Haywood County when he moved there permanently in about 1800. Some historians have said that Henry moved there alone in 1780, but this is incorrect — he was only 10 years old at that time. Others have credited Henry's brother John with taking the first Plott hounds to the Mountains. This too is incorrect, as John never lived west of the Catawba River.

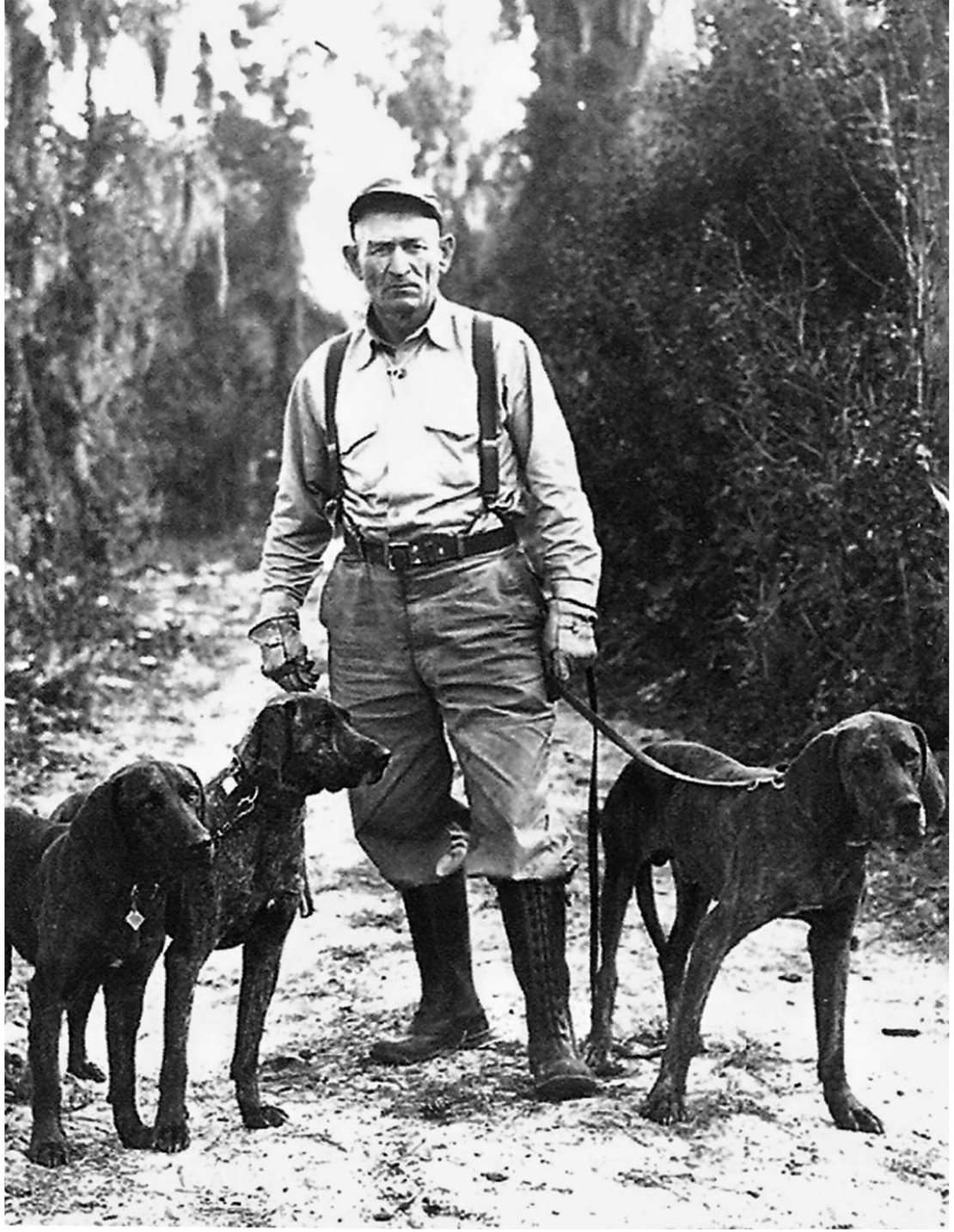
Four of Henry's sons — John T., Amos, Enos and David — did become notable Mountain Plott hound breeders and bear hunters. These direct descendants, and in later years Montraville, Von, Herbert and John A. Plott, deserve the most credit for perpetuating the family legacy of the Plott breed. They would soon be joined by non-family members Gola Ferguson, Taylor Crockett and Isaiah Kidd, all of whom played prominent roles in 20th-century Plott hound history.

And what an incredible history it has been. But many folks remain almost clueless about the merits and Germanic origins of the Plott hound breed, even with its worldwide notoriety. What qualities really set Plott hounds apart from all other dogs? How are they trained?

Perhaps it is best to let a few voices from the past answer these questions. Though these men are now deceased, their words ring as true today as they did when they were first spoken. This legendary group includes Plott family members Von Plott and George Plott, along with Taylor Crockett, Jake Waldroop, Dempsey Vance and Dewey Sharp. Their words are echoed by two latter-day breed experts, both still alive and well: John Jackson and C. E. "Bud" Lyon.

I offer a detailed account of the Germanic origins of the Plott dog in my book "Strike and Stay: The Story of the Plott Bear Hound." But breed icon and Plott family member Henry "Von" Plott (1896–1979) explained it like this:

*They (the Plott family) first developed the dogs in Germany. I don't know what they tried*



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NORTH CAROLINA STATE ARCHIVES

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**Previous page: One of Von Plott's Plott hounds, 1952. This page: Von Plott hunting with Plott's Happy, Plott's Balsam and Plott's Link. It is believed that Hugh Morton took this photo in the 1940s. Opposite page, from top to bottom: Plott hounds at the John Plott homeplace in Waynesville; family patriarch Montraville "Mont" Plott as a young man, circa 1870; George and possibly Cody Plott hunting, December 1938; and a 1930s bear hunt in Graham County that included three Plott brothers —Von at far left, John at second from left and Sam, bending at right.**



*to get the first Plott hounds. I wasn't there. I never been there. But they put out good stuff now, the Germans are smart people! I don't know what their name for the Plott dog was in German. But when the old man (Johannes "George" Plott) brought them here, they named them after him—they called them Plotts. But I don't know exactly what they were. They used the dogs to hunt bear and boar over in Germany. So these dogs have been here more than 200 years. But the old man surely had some idea of what he had. He figured they'd be worth something to him—and they sure as hell HAVE been worth something to him and us too!*

We might not know the exact origins of the breed. But we certainly cannot argue with the end result—a dog with a host of amazing skills.

Qualities such as courage, speed, heart, nose, loyalty, tenacity and stamina are commonly attributed to Plott hounds. And though experts would readily agree with those attributes, they add that the multipurpose capabilities of the dogs, along with their grit and intelligence, really make them special, truly a breed apart from all others.

**THEY WAS GOOD FOR HUNTING JUST ABOUT ANYTHING. IF THERE WASN'T NO BEAR FOR THEM TO GO AFTER, WHY, THEY'D CURL UP A COON. THEY'D RUN WILDCATS SOME, AND THEY COULD FIND RIGHT WHERE A WOLF WAS. THEM PLOTT HOUNDS WAS JUST JACKS-OF-ALL-TRADES!**

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After returning home from World War II, Taylor Crockett (1908–1996) devoted his life to breeding Plott hounds and to big-game hunting in western North Carolina. Crockett also spent a lot of time studying breed history. He recalled that the early Mountain settlers valued their dogs as herders, hunters, trackers and protectors.

*When my brother was just a toddler, I had an old Plott female that would take care of him. We lived on this farm and had big old turkey gobblers and geese and chickens running around, and a big old sow or bull might get out too. You had to really watch kids, you know? My brother would get out of sight, but I didn't have to worry, because that old Plott female would stay right with him. And if a chicken, bull or anything else got near him, why, she'd put it in high gear!*

Jake Waldroop's family was from the Nantahala area of the Great Smoky Mountains,

between Aquone and Andrews. Jake was a skilled hunter and houndsman. His family obtained their first Plott hounds in the late 1800s. He remembers their talented dogs:

*They was good for hunting just about anything. If there wasn't no bear for them to go after, why, they'd curl up a coon. They'd run wildcats some, and they could find right where a wolf was. Them Plott hounds was just jacks-of-all-trades!*

Multipurpose dogs indeed. But it takes a lot of grit to hunt bears. And according to "Big" George Plott, a decorated veteran of three wars and an older brother of Von Plott, the Plott dog had no shortage of that.

*Our dogs had to stay with the bear at the tree. This breed of dog won't quit, he may get clawed and chewed but he will be back next week. It is one with plenty of guts. The man (or hunter) who isn't game isn't fit to have him.*

Modern-day hunter and dog breeder Bud Lyon of Lake City, S.C., was a close friend and hunted often with breed legends Von Plott, Gola Ferguson and Taylor Crockett. Lyon has raised and hunted Plott hounds for more than half a century. He agrees with the comments of George Plott.

*One thing you could always count on with a Von Plott-bred Plott hound was that it would strike a bear trail and stay on it. And stay and stay and stay. There was just no quit in his dogs.*

Graham County native Dewey Sharp (1909–2008) hunted bears with Plott hounds in western North Carolina for 80 years. I talked with him about his Plott dogs and bear hunting shortly before his death. Sharp reminded me that it required hunters with special stamina to stay with their Plott dogs—and he rightly emphasized that it was the hunter's obligation to do so.

*The Plotts were aggressive; there was no back-up in them. They were real bad to fight a bear to the death, and they would not stop until either the dog or the bear was dead. If you did not get to them quick, they'd sometimes try and latch on to the bear like they'd do with a hog. But a bear is just too big and strong for them to do that. You had to follow a bear trail close and get to your dogs fast—and I mean real fast—or else you'd lose one or two of them every time.*

In other words, both the Plott dogs and their masters—or at least the good ones—must have a passion for the chase. Taylor Crockett said it best:

*Bear hunting with dogs is the most rugged sport that we have in the hunting line. To do it right you have to be in good physical condition. You generally find the bear in the very roughest places that he can find. It calls for a lot of endurance, determination and perseverance (from both dog and hunter). Just everybody's not a bear hunter. A real bear hunter likes to get in there with the dogs and find the track and turn loose on them. That's what separates the men from the boys.*

A good argument can be made that there are many dog breeds that are fiercely tenacious—Airedales are a good example. But what really separates the Plott dogs from all others is their keen intelligence. Though undoubtedly courageous, they are generally smart and agile enough to avoid serious injury.

John Jackson of Boone agrees with this assessment. Jackson has raised and hunted Plott hounds originating from the Taylor Crockett kennels for more than 25 years. He is a dedicated big-game hunter and a fine writer and breed historian. Jackson eloquently describes the intelligence of the breed.

*The most impressive quality of these outstanding dogs, however, was not their ability to readily and fiercely mix it up with large and dangerous animals, but rather their intelligence. The dogs seem to have an innate ability to bond with their owners and seemed to possess the unusual capability of knowing what the hunter was thinking or needed. There just seemed to be a unique bond between these dogs and their masters that few other breeds had.*

People unfamiliar with the breed often are curious as to how Plott hounds should be trained to get these outstanding results. Opinions on this vary by breeder. Some Plott enthusiasts have fairly elaborate training regimens and a specific timetable for evaluating their dogs. Von Plott basically disagreed. He attributed the success of the breed to good breeding practices and natural instincts, though he firmly believed that a dog should not be started on big game until it was at least a year old. Here are his thoughts.

*I start training my dogs when they are three or four months old—just take 'em to the woods and let 'em learn what their nose is for. You take them out and find your bear track, and you can tell whether he is going to be ready or not when he smells it. It's up to the dogs. They train themselves. It's instinct. He knows what to do when he gets big enough. First bear he smells, he'll take after it.*

*But I don't actually let them get on a bear until they are older—about a year old. When he's about a year old, you can put him on bear, but don't start him any younger than that or you'll ruin him. You wouldn't send a 12-year-old boy out to fight a full-grown man, would you? Hell, no. He's a boy, he ain't a man yet. It's the same with a dog. He'll have to be at least a year old before I put him on a bear.*

Tennessee businessman Hack Smithdeal was a close friend of the Plott family and bought his first Plott hounds from them. Smithdeal played an integral role in the breed's gaining nationwide recognition in the late 1940s. He employed an outstanding group of hunters and dog handlers he referred to as his brush-busters. Dempsey "Shook" Vance of Altamont was among the best of them. Vance agreed that Plott hounds are born with a natural hunting instinct.

*I don't know how it is, but them hounds know what to do no matter how smart and dog-wise the bear is. If it ain't deep-bred instinct, they sure pick up Plott trade secrets mighty fast!*

All of these attributes make the Plott hound unique. But it is the story of the breed that is perhaps most impressive. It is a tale of classic Americana with roots deeply entrenched Tar Heel soil. It is a story of a family that stayed true to the origins of their magnificent dogs and continued to refine them for more than 250 years.

Perhaps more important, it is the story of how the Plott family inspired a long-lasting, fierce devotion among their descendants, friends and supporters to preserving, improving and perpetuating the legacy of their extraordinary dogs. This is what truly sets the Plott hound breed apart from all others. And it is why all North Carolinians can take pride in claiming the Plott hound as their official state dog. ◆

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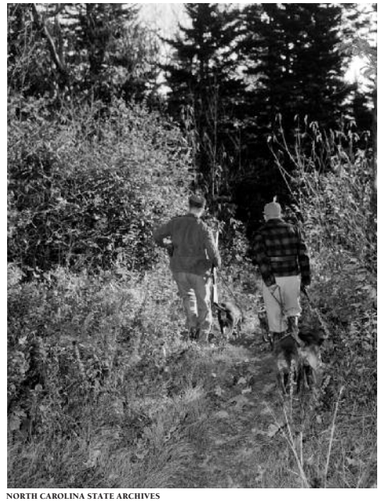
*Bob Plott, who lives in Statesville, is the author of four books, including "Strike and Stay: The Story of the Plott Hound" and "A History of Hunting in the Great Smoky Mountains." Find out more at www.bobplott.com.*



NORTH CAROLINA STATE ARCHIVES

COURTESY OF MARSHALL McCLUNG

COURTESY OF ELIZABETH PLOTT AND FONDA MARTIN

NORTH CAROLINA STATE ARCHIVES

NORTH CAROLINA STATE ARCHIVES

COURTESY OF ELIZABETH PLOTT AND FONDA MARTIN

COURTESY OF PLOTT FAMILY COLLECTION

NORTH CAROLINA STATE ARCHIVES

**Top to bottom, left to right: Mount Mitchell Bear Hunt Club, Marion, 1948; the Graham County home, family and Plott hounds of Samuel Blake Lovin, late 1870s, the earliest known photo of Plott hounds; Amos Plott's 50-caliber bear rifle from the 1840s with detail of patchbox below; Mount Mitchell Bear Hunt Club members carrying bear; Von Plott and possibly grandsons with Plott hounds in Waynesville, circa 1952; a Plott hound resting in a car trunk after a hunt in Robbinsville, 1940; and author Bob Plott with Plott's Bud.**

**CAROLINA GOPHER FROG** (*Rana capito*)

**State-listed as threatened, the rare and secretive gopher frog has lost most of its habitat, but a few populations persist in our Sandhills and southeastern Coastal Plain.**



*Portraits of Diversity* PHOTOGRAPHED BY TODD PUSSER

# AMPHIBIANS

North Carolina contains the most biodiversity of any temperate region in the world. This series highlights the unique diversity of life found within our state's borders, photographed against neutral backgrounds to emphasize each species' individual characteristics.

*Amphibian* means "double life," reflecting the dependency of this class of animals upon both water and land. True pioneers, amphibians were the first vertebrates to successfully colonize land, paving the way for reptiles, birds and mammals. Most North Carolina amphibians have aquatic larval stages and must return to water to breed, but several salamanders in the large family Plethodontidae cheat water dependency by depositing their eggs in damp, sheltered spots on land. Their larval development takes place entirely within the egg, which hatches into an adult in miniature. Water ties remain, however, in their dependency on moisture, and plethodontids are most numerous and diverse in the cool, damp forests of our Mountains.

North Carolina's amphibian diversity rivals that of any place on Earth, with more than 90 species: 30 of anurans (frogs and toads) and more than 60 of salamanders (which number will vary depending on whom you ask, and on what day; new salamanders are frequently recognized, often via molecular techniques, and the taxonomic status of some forms is continually debated). Our diverse amphibian fauna includes aquatic, terrestrial, arboreal and fossorial species. It includes marvelously grotesque hellbenders; graceful, two-limbed sirens; colorful, agile treefrogs; big, booming bullfrogs; and strikingly colored and patterned salamanders. From the little grass frog, which can sit on a pencil eraser, to the two-toed amphiuma, which can approach 4 feet in length, amphibians play crucial roles in our state's ecosystems. Some, such as the green frog, Fowler's toad and Eastern newt, are common, fairly conspicuous and widely distributed. Others, including the green salamander, Junaluska salamander and Carolina gopher frog, are secretive, rare habitat specialists, seldom encountered. Many species and populations are imperiled by human activities. One—the river frog—is believed extirpated from our state.

Amphibians are excellent bioindicators—proverbial "canaries in the coal mine" for environmental conditions. This is due largely to their permeable skins, which are highly sensitive to whatever they come in contact with. Besides featuring prominently in art, literature and other aspects of our culture, amphibians have been valuable to us as food; in medicine; as insect control agents; and in increasing our understanding of ecology, genetics, anatomy, physiology and many other facets of our world. The breeding calls of frogs and toads are friendly, familiar sounds.

Among many amphibian adventures afield, few have been more rewarding than those shared with my longtime photographer friend Todd Pusser, and few individuals are more skilled than he in capturing their diversity and personality on film. Todd photographed the subjects in these pages against neutral light or dark to highlight their features without the distraction of background elements. Enjoy these portraits of creatures bound to both land and water.

*–Jeff Beane*

## EASTERN TIGER SALAMANDER (*Ambystoma tigrinum*)

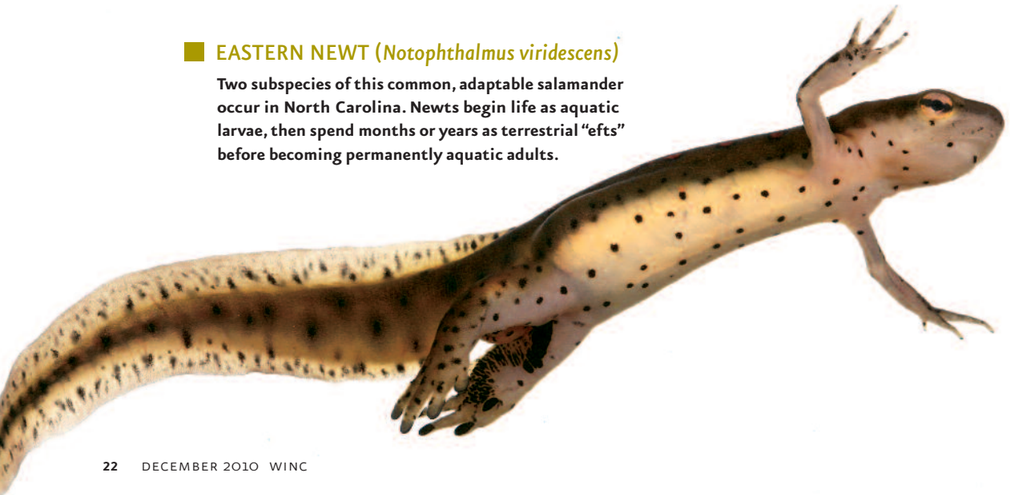
**State-listed as threatened, this large, secretive salamander breeds in ephemeral ponds in longleaf pine savannas.**
**Left: Typical adult. Top: Specimen with unusual pinkish coloration.**

## SQUIRREL TREEFROG (*Hyla squirella*)

**Common in our Coastal Plain, this small treefrog has excellent color-changing ability. Its name derives from its call, which resembles a scolding squirrel.**

## EASTERN NEWT (*Notophthalmus viridescens*)

**Two subspecies of this common, adaptable salamander occur in North Carolina. Newts begin life as aquatic larvae, then spend months or years as terrestrial "efts" before becoming permanently aquatic adults.**





NATURE'S WAYS
How Do Aquatic Salamanders Respire?
See Nature's Ways, page 39.

## JORDAN'S SALAMANDER (*Plethodon jordani*)

**This terrestrial salamander was named after the ichthyologist David Starr Jordan. Its small range lies entirely within Great Smoky Mountains National Park.**

## ORNATE CHORUS FROG (*Pseudacris ornata*)

**This colorful, secretive winter breeder uses large ephemeral ponds in longleaf pine savannas. It has undergone serious declines in recent years.**

## GREEN FROG (*Rana clamitans*)

**This abundant frog occurs throughout North Carolina in a variety of aquatic habitats. Its call resembles a loose banjo string being plucked.**

## AMERICAN BULLFROG (*Rana catesbeiana*)

North America's largest frog, the abundant bullfrog and its booming "jug-o-rum" call are well known throughout North Carolina. A juvenile is depicted here.

## LITTLE GRASS FROG (*Pseudacris ocularis*)

This tiny Coastal Plain resident is our smallest amphibian. Its insect-like call is so high-pitched that some people have difficulty hearing it.

## GREEN SALAMANDER (*Aneides aeneus*)

Currently our only state-listed endangered amphibian, this terrestrial species occurs in six counties in our southwestern Mountains, where it inhabits shaded rock outcrops and sometimes climbs trees.

## PINE BARRENS TREEFROG (*Hyla andersonii*)

This beautiful, uncommon frog inhabits bay heads, seeps, and pitcher plant wetlands in our Sandhills and southeastern Coastal Plain. Its call is a nasal "quonk."

## TWO-TOED AMPHIUMA (*Amphiuma means*)

Our longest amphibian, the eel-like, swamp-loving amphiuma may bite if carelessly handled. Among its many unique features are its tiny limbs, each with only two toes.



## RED-LEGGED SALAMANDER (*Plethodon shermani*)

Unlike most amphibians, members of the genus Plethodon undergo their entire life cycle on land. This colorful species occurs in the Nantahala and Tusquitee Mountains.

## SPRING PEEPER (*Pseudacris crucifer*)

Though abundant, this small harbinger of spring is more often heard than seen. It breeds in temporary wetlands throughout most of North Carolina.

## MARBLED SALAMANDER (*Ambystoma opacum*)

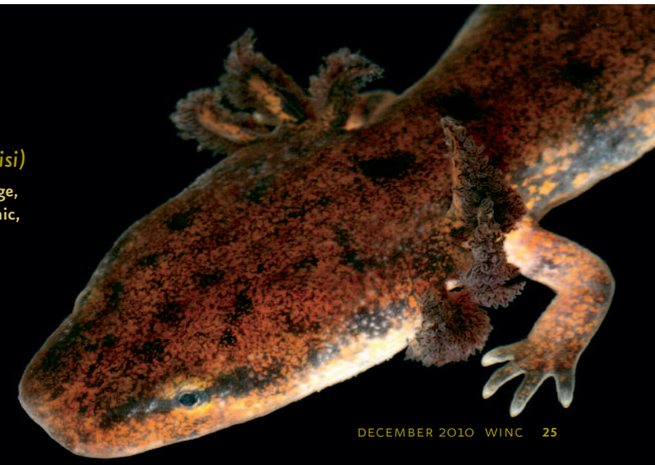
This secretive, boldly patterned salamander breeds in fall, nesting under sheltering objects along woodland pools. Females guard their eggs until winter rains fill the pools and the eggs hatch into aquatic larvae.

## SOUTHERN TOAD (*Bufo terrestris*)

Abundant in our Coastal Plain, this personable, terrestrial toad may be identified by its prominent cranial knobs. Toads are tremendous insect control agents.

## NEUSE RIVER WATERDOG (*Necturus lewisi*)

State-listed as a species of special concern, this large, fully aquatic salamander is a North Carolina endemic, found only in the Neuse and Tar river systems.



# The Cold, Hard Trout

Written by Marty Shaffner | Photographed by Chip Laughton

*With the proper clothing, a change of tactics and a little determination, both fly-fishermen and spin anglers can have great trout fishing in the winter.*

When I was in my early 20s, as soon as deer season was over, I began to long for the arrival of spring. Of course, winter hadn't even really begun when deer season ended, so I would clean up and rearrange tackle boxes, re-line reels, tie flies and sit around pouting. Except for the occasional small-game or bird hunt, I spent my time longing to wet a line.

Then I discovered winter trout fishing and wondered what I'd been moping about all those years. After I became a guide, most of my personal trout fishing took place during the winter months, when bookings were slow to nonexistent. Some of the best trout fishing of the year, especially for large trout, can be during the late fall and winter months.

Outfitted with proper clothing and gear and armed with slightly different tactics, fly and spin fishermen both can enjoy great angling and have a shot at their biggest trout ever. The majority of my large trout have come in the cold, including a huge hook-jawed brown trout I landed on a blood-chilling morning when the temperatures hovered in the upper teens. Preparation and having the right mind-set are half the battle in cold-weather fishing.

## Dress for Success

Fishing in the cold without the proper clothing is miserable, if not impossible. To stay warm while fishing in the winter months, you must start with your hands and feet. Good wool socks are mandatory, and pairing them with thin, synthetic liner socks helps wick moisture away from your skin. Nothing keeps your feet warmer than wool. Go ahead and drop a little more money on a couple of pairs of quality wool socks and some thin synthetic liners. An additional tip is to wear only your liner socks while traveling to the stream so your feet don't sweat too much in your warm vehicle. The same applies to your other layers. Wear no more than you have to during your commute.

You'll find it is harder to keep your hands warm while fishing than when you're deer hunting. The humidity in the air around streams will seep through your gloves and clothing and chill you to the bone. I've tried everything from neoprene gloves to ski gloves and have settled on either wool or polar fleece (with a wind-blocker lining) mittens in which the finger and thumb sections fold back to convert to fingerless gloves. When folded back and converted to fingerless gloves, these mittens allow you to cast, tie knots and retrieve line easily because of the exposed fingers but still provide warmth to your hands.

When your fingers become cold — and they will if you fish long enough — just fold the mitten part over your fingers and warm them up. When it is really cold, or if you have chronically cold hands like me, the disposable handwarmers available at most outdoor stores are an essential item. These handwarmers, when exposed to air and shaken, will stay warm for up to six hours. I use four of them, one stuck in the mitten part of each glove and one positioned on each wrist and held in place by the bottom part of the glove. The ones on your wrists are the most important ones because they warm the blood going into your hands and fingers. I can't lay claim to this little tip — a doctor friend of mine enlightened me about this trick — but I can tell you it works.

**Although winter trout fishing takes a bit more thought as to proper clothing, some very nice fish are available in the cold.**

Next is your body, and the key is layers. I would rather have one too many layers and have to take one off than wish I had another layer on. I have worked outside, hunted and fished for the last 26 years, and this has served me well.

If it is brutally cold, I wear four layers: a thin base layer, a thicker underlayer, an outer layer and then a windbreak layer to seal body heat in. My base layer is a pair of thin long underwear made of polyester or polypropylene that fits tight to the body. This is a wicking layer that wicks sweat away from the skin and dries quickly. Next comes a set of thick polyester fleece long underwear, which is sometimes called expedition weight; this is the insulating layer. Next I wear a pair of heavy fleece wading pants on the bottom and a heavy fleece jacket on top. I top all this off with a wind barrier and heat-retention layer. That's a fancy way of saying wear your raincoat even if it's not raining, and wear chest waders even if you're wading only knee deep. This seals wind out and body heat in.

Last but definitely not least is your head. You can lose a huge percentage of your body heat from an uncovered head. A baseball cap won't cut it in the cold. My favorite cap is a polar fleece stocking cap with a windblocker membrane, and I don't leave home in the winter without it. Dressed in this manner, I have fished with temperatures in the teens, and I can't say my hands were toasty, but my core body was warm, and I fished effectively. A last note: If your hands become too cold, remove your gloves or mittens, place your hands and mittens inside your coat under your armpits and you have an instant 98.6-degree handwarmer.

## *Flies, Rigging and Tactics*

Well, you're all bundled up like the Michelin Man, and you're on the stream. Now what? A warning to all of you dry fly purists: You should have stayed home. Unless you are fortunate enough to catch a *Baetis* mayfly hatch, nymphs fished slowly on the bottom with lots of weight are the weapons of choice. Hatches are pretty slim during the winter, and fish are sluggish.

Any hatches that do occur will be small and usually consist of little black stone flies, various midges or members of the *Baetis* genus of mayflies. Most anglers lump all members of the *Baetis* flies together as blue-winged olives or simply bluewings. My favorite nymph patterns for winter fishing are small pheasant tail nymphs, any little black stone fly nymph pattern and small midge pupae patterns.

Little black stone fly nymphs can vary from elaborate patterns with rubber legs or goose biots to something as simple as a black pheasant tail. My two favorite little black stone nymph patterns are the black pheasant tail and the black copper john nymph, both in sizes 18 and 20. As for midges, I carry several variations and colors of the zebra midge. Colors usually are black, brown, gray and cream, with beadheads of clear glass, brass or black nickel and ribbing of gold or copper wire. If I could have only one color, I would choose black with silver wire and a black bead or clear glass bead.

*Baetis* nymphs can be effectively imitated by pheasant tail nymphs in almost all situations. The pheasant tail is my favorite nymph, period, and I carry it in plain and beaded versions in sizes from 12 to 24, but sizes 20 to 24 are used most in the winter. I prefer unbeaded patterns for winter fishing for two reasons. I'll be using split shot for weight because a bead just doesn't have enough weight to get the fly into the strike zone, and an unweighted fly will move more freely during the drift.

Speaking of split shot, in my opinion they are mandatory for winter fishing. Buy the removable type, because the number of split shot you'll use will vary according to water speed and depth. It takes a little while to get the hang of guessing how much weight is needed to get to the bottom. With some experience you can usually get pretty close on the first try, but you'll never get it right every time.

Two smaller split shot are better than a larger one of the same weight. Two smaller split shot will get hung on the stream bottom less often than one large one. I ask myself two questions every time I'm nymph fishing: *Have I bumped the bottom of the stream?* and *Have I caught or hooked a fish?* If the answer to both is no, then I need to add more weight, because my flies are not getting on the bottom, and the bottom is the strike zone in cold-water situations.

I fish with a strike indicator, and in winter I use poly yarn indicators exclusively. Not the premade ones with the rubber O-rings, but a piece of poly yarn half-hitched directly to the line. Yarn is so much more sensitive to subtle strikes than any other type of indicator, especially in slow water, and when rigged in this manner, it is the only way to go.

When fishing a rig with two or more split shot and a yarn strike indicator, leave the 3-weight rod at home, and forget about those graceful, long casts. Roll casts are almost all I do when fishing these rigs. Roll casting keeps tangles to a minimum and is much less tiring. Roll cast upstream and drift down all the way past yourself. At the end of the drift, lift the rod upward to get the weight off the bottom, and roll cast back into the run. I fish a 5-weight in the longest length possible, usually 8½ or 9 feet. The long rod helps with roll casting, mending your line and keeping as much of your line off the water as possible, which in turn enables you to get a better drift.

MELISSA McGAW/NCWRC

JIM DEAN

As important as how you fish are where and when you fish. Concentrate your efforts on the deeper, slower runs and pools in the stream, slowly probing the bottom. As water temperature gets lower, especially below 40 degrees, trout will seek out the slower, deeper areas of a stream, which are less affected by air temperature. Trout use less energy to hold in the stream against these currents, though the current brings food to them.

The days you fish are also important. I believe in the adage that the best time to fish is whenever you

can, but in winter not all days are created equal. Unlike at most times of the year, midday in sunny weather seems to be best, as the sun warms the water and increases trout activity. A warm period of several days can bring exceptional fishing. Approaching snow fronts and snowfall also produce great fishing. Trout feed heavily then, especially when it is actually snowing. Snowy days are magical times to be on the stream, but make sure you leave while it is safe to drive home. No trout is worth losing your life or wrecking your vehicle over.

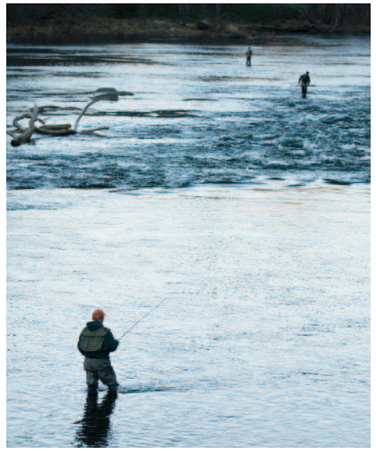
### *What If You Don't Fly-Fish?*

Anglers who use spinning gear can also get in on the cold-weather action. These same tactics work for spinning gear. Longer spinning rods are better at achieving good drifts than the shorter ultralight rods usually used by most trout fishermen.

One of the best trout fishermen I've ever fished with was my eighth-grade science teacher, Charles Golding. He was a master at high-stick fishing, a technique usually associated with fly-fishing with nymphs, but he fished with live bait, usually worms. His rod and reel of choice were an old 8- or 9-foot fiberglass fly rod and an automatic fly reel filled with monofilament line. His tactics and gear, although unconventional, were deadly. He could make even experienced anglers look like novice fishermen when he fished alongside them. His secrets were using enough weight to stay on the bottom and maintaining a good drift, both of which are key when fishing live bait or nymphs.

Another gentleman I knew specialized in catching big brown trout in the winter on bait. His bait of choice was minnows, and he would occasionally use night crawlers, if rain had made the water a little murky. His technique was on the other end of the spectrum. The minnow was hooked behind the dorsal fin lightly with a No. 6 or 8 hook, with a split shot big enough to hold the bait on the bottom. The minnow would frantically try to swim away from the weight, sending out predator-attracting vibrations and flash. This fellow targeted the large, deep, slow-moving pools where big browns live. Some days he might not catch anything, but some days he would catch what would be the fish of a lifetime for most anglers.

Both of these men were very specialized in their very different tactics, but they had



one thing in common: They both fished slowly and kept their bait on the bottom, where winter trout congregate. No matter what technique you use for winter trout fishing, keep your offering on the bottom.

Occasionally, during periods of warmer winter weather, lures can be effective. Minnow-type lures such as smaller Rapalas, Yo-Zuris or Daiwa minnows can produce large trout when the water has warmed and fish are more active. In deep pools, a CountDown Rapala (the sinking version of the Rapala minnow) or a floating minnow lure with split shot added enables the lure to be fished deeper, and that will catch more fish. Another effective but often overlooked lure for big trout is the Rebel Crawdad crankbait. Usually thought of as a smallmouth bass lure, it has caught it's share of big brown trout. Fish it in the same deep pools and runs as other lures.

Effective spinning outfits can be anything from short ultralight rigs to heavier medium-action rods. When fishing bait, I prefer a rod in the 6-to-6½-foot range with a light, forgiving tip but with plenty of backbone in a medium-light action. The soft tip helps prevent soft natural baits from being flung off when casting but still has the backbone to set the hook and help steer big trout from submerged wood and rocks. For casting lures, a shorter and lighter-action rod can be helpful, but I don't like a rod shorter than 5½ feet because winter fishing is usually done on larger waters.

A quality spinning reel matched in size to your rod is important because a smooth drag is invaluable when you hook up with a big hook-jawed brown trout. My line preferences are 4- to 8-pound quality mono line or 10-pound braid with a 6-pound fluorocarbon leader. Fluorocarbon is more abrasion resistant, which means the knot connecting the leader to the braid will hold up better. There's less chance of breaking the knot, and also the line is not as visible to fish.

### *Winter Destinations*

North Carolina has no shortage of places to fish for trout in winter. Any of the larger Delayed Harvest streams are good places to start, especially for a fly angler. If you are a spin fisherman, just remember that all lures should be unscented with single hooks on these waters. Good options for spin fishermen wanting to fish live bait are Hatchery Supported streams and, as long as you obtain permission from the landowners, the sections of water upstream and downstream of Delayed Harvest areas.

Most of the streams have holdover fish that travel both upstream and down and winter in these areas. The Cherokee reservation, with its larger streams, also is a great destination. The streams have sections that are designated for fly-fishing only, but there is a lot of water open to live bait and treble hooks. Almost any of the larger streams in North Carolina's Mountains can yield good winter trout fishing as long as you remember the tips discussed above and dress appropriately. So this winter get a jump on the season. You just might hook up with the trout of a lifetime. ◆

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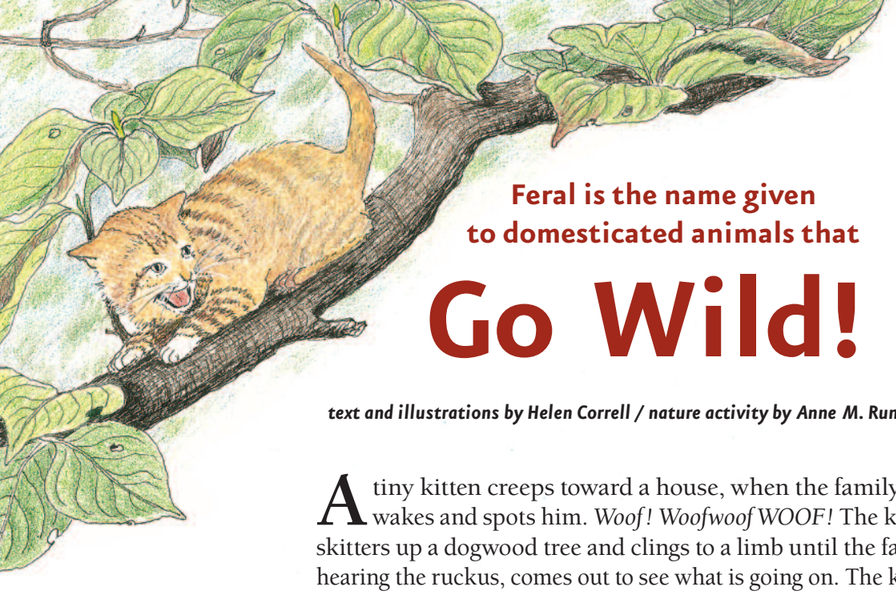
*Marty Shaffner is a writer and fishing guide living in Elkin. He is a frequent contributor to* WINC. For the locations of Delayed Harvest, Hatchery Supported or other trout streams, visit www.ncwildlife.org.

**Aside from an occasional mayfly hatch, winter fly-fishermen should leave their dry flies at home and fish nymphs slowly on the bottom of the stream.**



## Feral is the name given to domesticated animals that

# Go Wild!

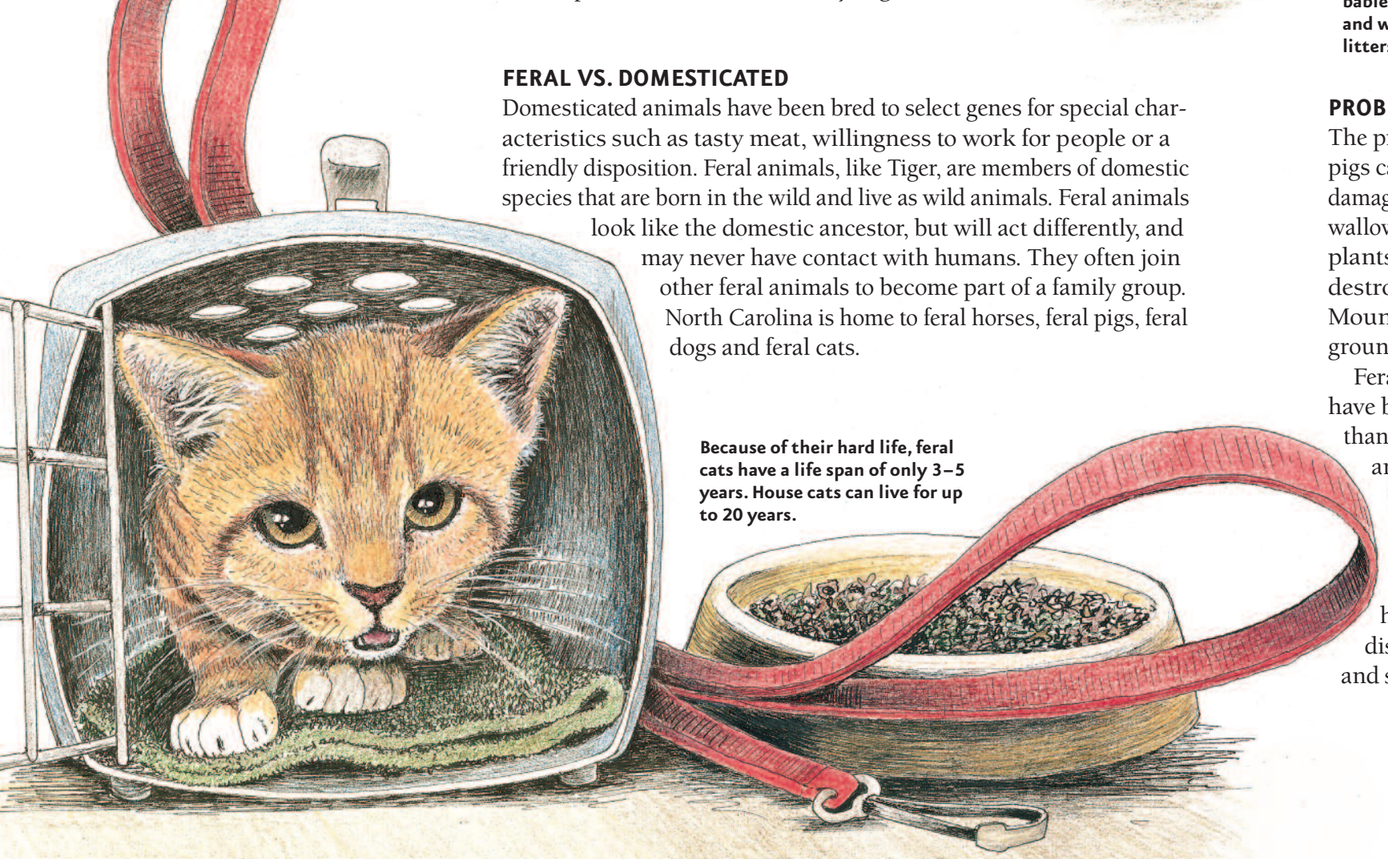
*text and illustrations by Helen Correll / nature activity by Anne M. Runyon*

A tiny kitten creeps toward a house, when the family dog wakes and spots him. *Woof! Woofwoof WOOF!* The kitten skitters up a dogwood tree and clings to a limb until the father, hearing the ruckus, comes out to see what is going on. The kitten hisses, and swipes at the man with his paw. "You're a wild little thing," he says. Wearing gloves for protection, the man lifts the feral kitten off the branch and puts him in a cage. He names him Tiger. The next day Tiger visits the vet, where he is neutered and gets a rabies shot. Within a few weeks, with patient care from the family, Tiger is tamed.

**A female pig can begin to have babies before six months of age and will continue to have large litters at short intervals.**

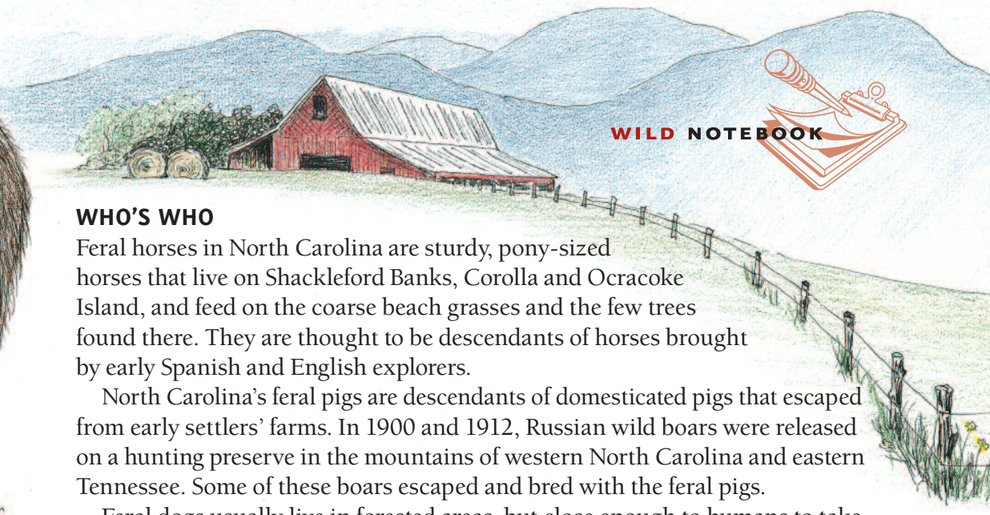
### FERAL VS. DOMESTICATED

Domesticated animals have been bred to select genes for special characteristics such as tasty meat, willingness to work for people or a friendly disposition. Feral animals, like Tiger, are members of domestic species that are born in the wild and live as wild animals. Feral animals look like the domestic ancestor, but will act differently, and may never have contact with humans. They often join other feral animals to become part of a family group. North Carolina is home to feral horses, feral pigs, feral dogs and feral cats.



**Because of their hard life, feral cats have a life span of only 3–5 years. House cats can live for up to 20 years.**





WILD NOTEBOOK

### WHO'S WHO

Feral horses in North Carolina are sturdy, pony-sized horses that live on Shackleford Banks, Corolla and Ocracoke Island, and feed on the coarse beach grasses and the few trees found there. They are thought to be descendants of horses brought by early Spanish and English explorers.

North Carolina's feral pigs are descendants of domesticated pigs that escaped from early settlers' farms. In 1900 and 1912, Russian wild boars were released on a hunting preserve in the mountains of western North Carolina and eastern Tennessee. Some of these boars escaped and bred with the feral pigs.

Feral dogs usually live in forested areas, but close enough to humans to take advantage of their trash and dump sites. They also eat road-killed animals, wild fruits and berries, and weak ducks and other birds.

Feral cats can be found living closer to humans than you would expect. They are in cities as well as the country, and use abandoned buildings, junk cars, brush piles, culverts and even the back corner of a garage for cover and protection. Like house cats allowed outside, they hunt and scavenge at night, preying on rodents, birds and reptiles, and eating garbage and pet food left outside. Like feral dogs, feral cats have ancestors who were once family pets.

### PROBLEMS ABOUND

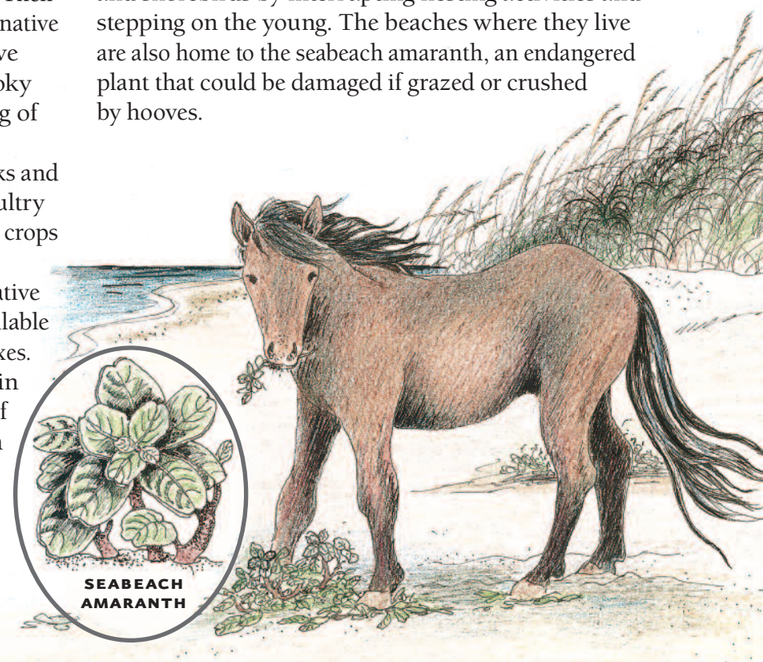
The problems caused by feral animals are many. Feral pigs can damage land by rooting or grubbing in fields, damaging fences and destroying crops or pastures. Their wallows can affect ponds and wetlands by killing native plants and muddying the water. Feral pigs have destroyed fragile ecosystems in the Great Smoky Mountains National Park and killed the young of ground nesting birds.

Feral dogs can, but don't always, travel in packs and have been known to kill more livestock and poultry than coyotes do. They also eat and damage fruit crops and kill family pets.

Feral dogs and cats eat the same food as native predators, seriously reducing the food available for natives such as raccoons, bobcats and foxes.

Feral cats are known to kill songbirds in huge numbers and also carry a multitude of diseases such as distemper, rabies, ringworm and salmonellosis.

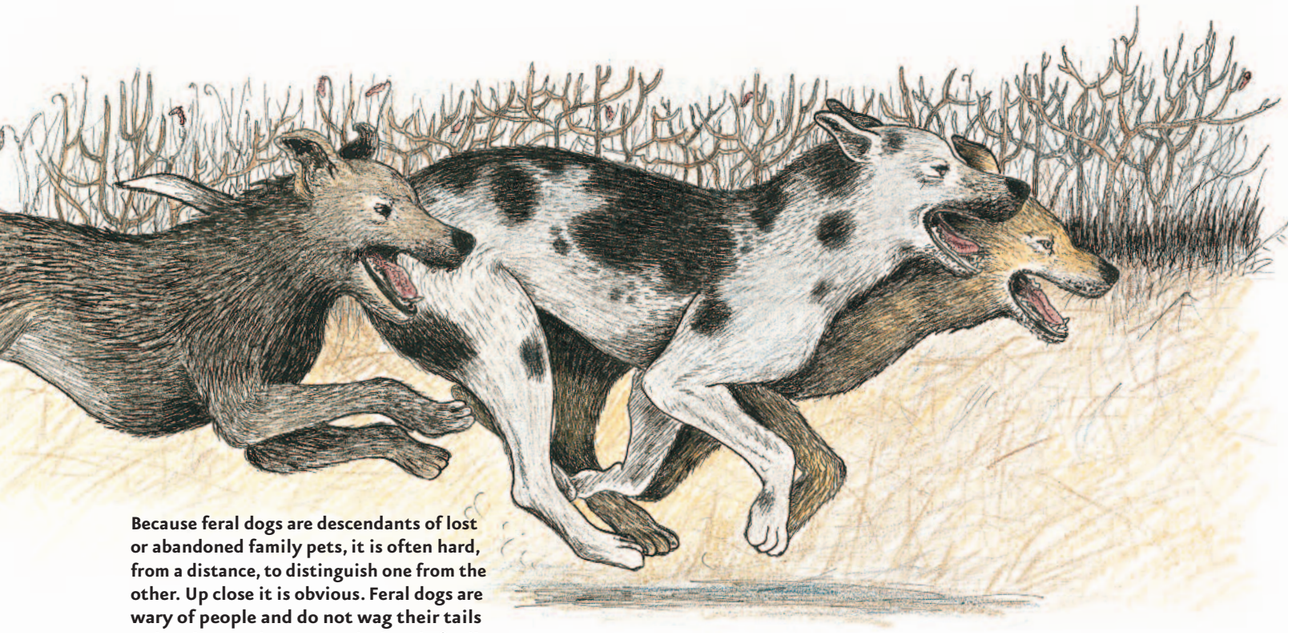
The feral horses of the Outer Banks can be a threat to ground-nesting native animals such as sea turtles and shorebirds by interrupting nesting activities and stepping on the young. The beaches where they live are also home to the seabeach amaranth, an endangered plant that could be damaged if grazed or crushed by hooves.



SEABEACH AMARANTH

### WHAT'S TO BE DONE?

Feral animals in North Carolina remember no other way of life. Most people agree that something must be done about feral animals, but they disagree on what. Feral dogs and pigs are often shot if they are damaging land or attacking domesticated animals. Many feral cats are trapped and euthanized. Some people who love cats become caretakers of a colony of feral cats. They encourage the TNR (trap-neuter-return) method of population control, but studies have shown that TNR is basically ineffective at dealing with the problems feral cats cause. The wild horses that live on the Outer Banks have it good compared to the other feral animals. They live in land set aside for them on Shackleford Banks, Corolla and Ocracoke Island, and are considered a cultural treasure of the state. They are protected by special nonprofit organizations.



**Because feral dogs are descendants of lost or abandoned family pets, it is often hard, from a distance, to distinguish one from the other. Up close it is obvious. Feral dogs are wary of people and do not wag their tails and act happy when approached, as do family pets. Instead most will become aggressive and growl, or bark, and usually run.**

### Get Outside

*Spread the word*! Now that you know about feral animals, one way you can help is to tell others how important it is to take special care of their pets. Dogs should be spayed or neutered and kept in a protected area. Cats should spend most of their time indoors. Many North Carolina cities and towns have nonprofit groups that help manage feral animals. There are several organizations at the coast to help the horses. If your family is interested in joining one, you can find one in your area online.

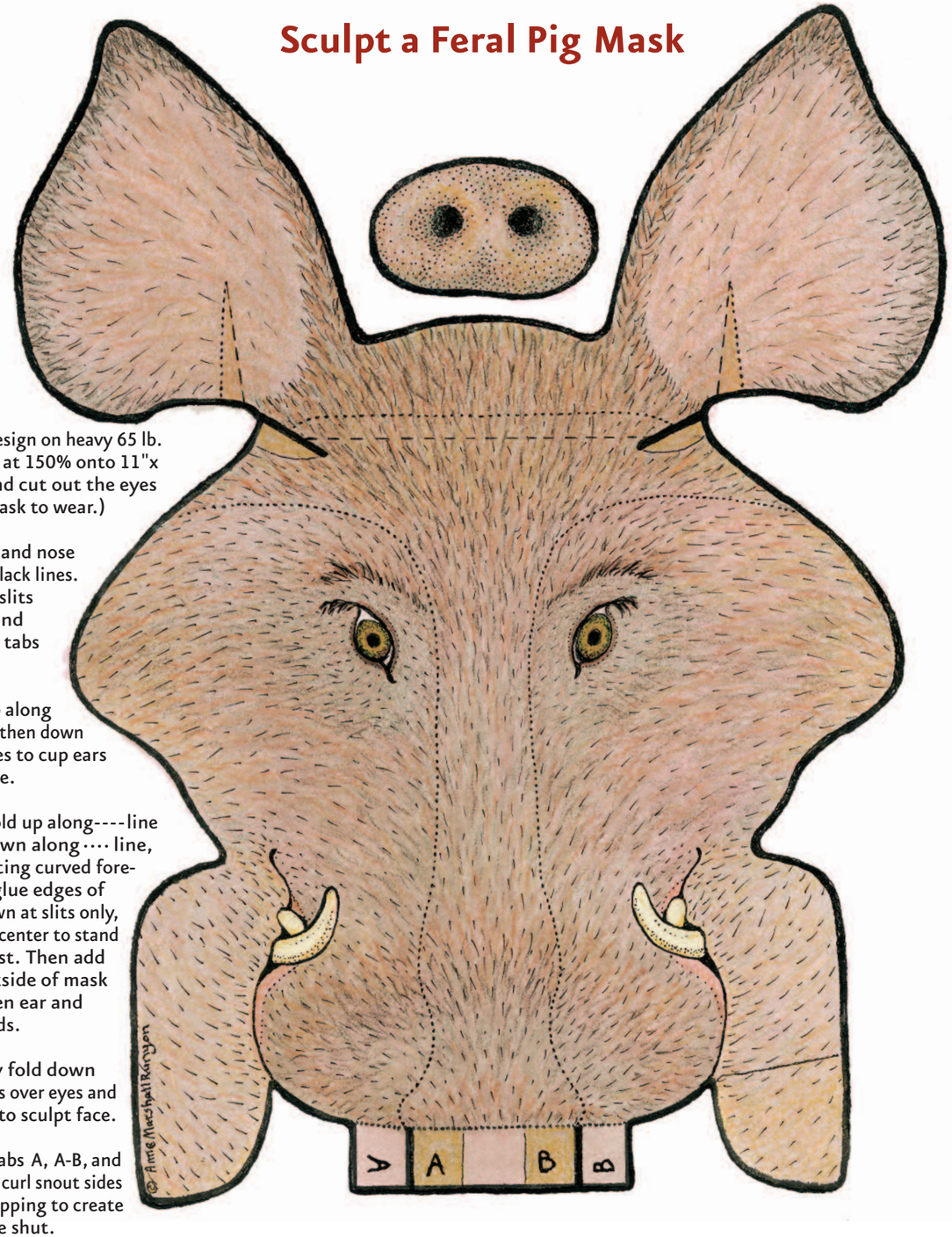
### Read and Find Out

"The Wild Horses of Shackleford Banks" by Carmine Prioli, John F. Blair, Publisher, 2007.
"Cat, Cat, Feral Cat" by Clarissa Wolf, Avid Readers Publishing Group, 2009.
"Wild Pigs in the United States: Their History, Comparative Morphology, and Current Status" by John J. Mayer and I. Lehr Brisbin, Jr., University of Georgia Press, 2008.

In *Wildlife in North Carolina:*
"Hog Wild" by Mark Jones, February 2006.
"Unbridled Alliance" by Greg Jenkins, February 2005.

Find out more about Project WILD Workshops and literature on the Wildlife Commission's website at www.ncwildlife.org.

## Sculpt a Feral Pig Mask




1) Copy mask design on heavy 65 lb. paper. (Copy at 150% onto 11"x 17" paper and cut out the eyes for a large mask to wear.)

2) Cut out face and nose along thick black lines. Also cut the slits under ears and between the tabs A and B.

3) Ears: Fold up along ----lines and then down along ···· lines to cup ears forward. Glue.

4) Forehead: Fold up along----line and then down along ···· line, gently sculpting curved forehead. Now glue edges of forehead down at slits only, allowing the center to stand up like a crest. Then add tape to backside of mask to strengthen ear and forehead folds.

5) Face: Gently fold down along ···· lines over eyes and down snout to sculpt face.

6) Snout: fold tabs A, A-B, and B down. Now curl snout sides down, overlapping to create chin and glue shut.

7) Nose: Glue tab A to A, tab B to B and then glue nose in place on them.

# back porch

NEWS and NOTES

Edited by Jim Wilson

## Mountain Heritage Trout Program Adds Locations

Old Fort and Burnsville have recently joined the N.C. Wildlife Resources Commission's Mountain Heritage Trout Waters Program.

In Old Fort, located in McDowell County, a .7-mile section of Mill Creek that runs through the downtown area, now is classified as a Mountain Heritage Trout Water. Because it is Delayed Harvest trout water, anglers must use single-hook artificial lures and cannot harvest or possess any trout from Oct. 1 until one half-hour after sunset on June 3, 2011. The section will then remain closed to fishing until 6 a.m. on June 4, when it reopens to anglers 15 years and younger under Hatchery Supported regulations, with no bait restriction, no minimum length limit and a 7-trout-per-day creel limit. The section will open to anglers of all ages at noon on June 4. Hatchery Supported regulations remain in effect until Oct. 1 each year.

In Burnsville, the .75-mile section of the South Toe River located in the Yancey County Toe River Campground is classified as a Mountain Heritage Trout Water. It is Hatchery Supported water where anglers have no bait/lure restrictions, no size limit restrictions and a 7-trout-per-day creel limit from 7 a.m. on the first Saturday in April until the last day of February. Hatchery Supported waters are closed to fishing from March 1 until the first Saturday in April.

The Mountain Heritage Trout Waters program, established in July 2008, promotes trout fishing as a North Carolina Heritage Tourism activity. The Mountain Heritage Trout Waters license is available only from the Wildlife Commission by calling 1-888-248-6834 or ordering online. This $5 license is available for anglers 16 years and older and is only valid for three consecutive days in Mountain Heritage Trout Waters.

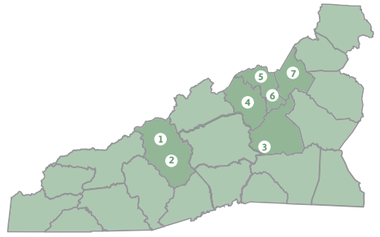
Anglers who currently hold a valid resident or non-resident North Carolina trout fishing license can fish Mountain Heritage Trout Waters at no additional cost.

BROWN TROUT

RAINBOW TROUT

BROOK TROUT

ILLUSTRATIONS BY DUANE RAVER




**Mountain Heritage Trout Program Locations**

1 Maggie Valley
2 Waynesville
3 Old Fort
4 Burnsville
5 Bakersville
6 Spruce Pine
7 Newland

For visitors who do not have fishing equipment, loaner rods and reels are available free of charge on a first-come, first-serve basis through the commission's Tackle Loaner Program, which offers rods and reels, including spincast, ultralight and fly rods, for the day.

In Burnsville, anglers register at the Toe River Campground office, located on Patience Park Road, to receive a tackle-loaner identification card and check out a rod and reel for the day. In Old Fort, visitors can borrow a rod and reel at Mountain Gateway Museum, located at 102 Water Street in Old Fort.

After returning the loaner rod and reel, first-time participants under 16 receive a free mini-tackle box containing tackle, such as lures, flies, spinners. Tackle loaner program registrants can use their identification cards at any participating tackle loaner site across the state, including the six tackle loaner sites associated with the Mountain Heritage Trout Waters program: Spruce Pine, Maggie Valley, Waynesville, Bakersville, Burnsville and Old Fort. Rods and reels must be returned to the original loaner site.

Download Mountain Heritage Trout Waters maps or find out more information about the program at www.ncwildlife.org.





## Green Growth Certification Available

The N.C. Wildlife Resources Commission, along with the N.C. Wildlife Federation and the North Carolina chapter of the American Society of Landscape Architects, has unveiled a green-growth initiative that encourages wildlife-friendly practices for new and existing residential developments.

The Wildlife Friendly Development Certification program recognizes residential land developers who promote the conservation of wildlife habitat and use environmentally sound construction practices in their developments.

KEN TAYLOR/NCWRC

Developments that are certified as wildlife friendly incorporate features that protect existing habitats by providing food, water, cover and places to raise young, the four components of suitable wildlife habitat. Once certified, these developments can be marketed to homeowners who value the protection of natural resources.

To acquire certification, developers work closely with the staffs from the Wildlife Commission and Wildlife Federation to determine what wildlife friendly features will be incorporated into the development to earn certification. Developers must include a certain number of wildlife friendly features throughout all phases of the development's planning and construction, and must maintain these features once the development is completed.

"North Carolina is experiencing unprecedented growth. Through sustainable development practices outlined in this program, we can contribute to the conservation of wildlife habitats alongside new developments," said David Cox, the commission's technical guidance supervisor. "This voluntary program allows for growth but, at the same time, conserves wildlife resources and improves the quality of life for homeowners."

While the program is intended for developers to participate from the initial stages of residential planning, some existing developments may qualify for certification depending on the number of wildlife friendly features already incorporated.

Visit www.ncwildcertify.org to find out more about this voluntary program and to download the Wildlife Friendly Development handbook, which describes the certification process in detail and provides a step-by-step guide for developers to create a Certified Wildlife Friendly Development.

## Commission Staff Members Earn Governor's Awards

Two staff members and a volunteer with the N.C. Wildlife Resources Commission are among the recipients of the Governor's Conservation Achievement Awards, presented at the 47th annual banquet by the N.C. Wildlife Federation.

The Wildlife Federation named Master Officer Chad Starbuck as Wildlife Enforcement Officer of the Year; Inland Fisheries' Special Projects Coordinator Chris Goudreau as Water Conservationist of the Year; and Lanny Cowan as Hunter Safety Educator of the Year.

The announcement and presentations came at the awards banquet on Sept. 18, an occasion for recognizing those who exhibit an unwavering commitment to conservation and an uncommon determination to safeguard the state's natural resources.

"Each year our awards committee puts out an all-points-bulletin for conservation heroes," said Tim Gestwicki, executive director of the N.C. Wildlife Federation. "We seek to learn about those people, agencies, and businesses that go an extra 10 miles in the cause of conserving North Carolina's natural treasures. And each year we are amazed at the commitment and creativity of North Carolina citizens in protecting wildlife and wild places. Our primary focus is to applaud and honor these people who work so hard for wildlife and the air, water, land that they and all of us depend upon."

Those recognized for their stewardship and conservation from the N.C. Wildlife Resources Commission:

- Goudreau was a critical player in the five-year effort to renegotiate the hydropower licensing agreements along the Catawba River. His leadership in stakeholder collaboration resulted in major improvements to wildlife habitat in the region.
- For 16 years, Cowan has volunteered as an instructor through the Hunter Education Program, teaching vital and potentially lifesaving lessons. He has taught hunting education courses in Hertford County since 1999, and at Ridgecroft School for six years.
- Patrolling Alexander County, Starbuck enforces fishing, game and boating regulations in his law enforcement duties while also working to educate the public, especially youth, about the need for wildlife conservation.

NCWRC

NCWRC

**From left, Master Officer Chad Starbuck, fisheries biologist Chris Goudreau and hunter safety educator Lanny Cowan were honored.**

The N.C. Wildlife Federation is the state affiliate of the National Wildlife Federation. The nonprofit creates consensus by engaging government, industry and the public in efforts to protect wildlife resources. For more information, go to www.ncwf.org or call (919) 833-1923.

## IN SEASON

This month, these seasons are open in North Carolina:

**Black Bear:** See *Regulations Digest* for seasons and locations.

**Bobcat:** Through Feb. 28.
**Brant:** Through Dec. 4 and Dec. 18–Jan. 29.
**Canada Goose and White-Fronted Goose:** Resident Population Zone through Dec. 4 and Dec. 18–Feb. 5; Southern James Bay Zone through Dec. 31.
**Common Snipe:** Through Feb. 26.
**Crow:** Through Feb. 28.
**Ducks, Coot and Mergansers:** Through Dec. 4 and Dec. 18–Jan. 29.
**Fox:** See *Regulations Digest* for seasons and locations.
**Light Geese (Snow, Blue and Ross'):** Through March 9.
**Mourning Doves and White-Winged Doves:** Dec. 18–Jan. 14.
**Pheasant:** Through Feb. 1.
**Quail:** Through Feb. 28.
**Rabbit:** Through Feb. 28.
**Raccoon and Opossum:** Through Feb. 28.
**Ruffed Grouse:** Through Feb. 28.
**Sea Ducks:** Through Jan. 31.
**Squirrel:** Gray and red through Feb. 28; fox through Dec. 31 in selected counties.
**Tundra Swan:** Through Jan. 31 (by permit only).
**White-tailed Deer:**
Eastern: Gun season through Jan. 1.
Central: Gun season through Jan. 1.
Northwestern: Gun season through Jan. 1.
Western: Gun season through Dec. 11.
**Wild Boar:** Through Feb. 28 only in Cherokee, Clay, Graham, Jackson, Macon and Swain counties. In the other 94 counties of the state, feral hogs are not considered to be wild boars, and the commission does not regulate them.
**Woodcock:** Dec. 31–Jan. 29.

There is no closed season or bag limit for groundhog, coyote, striped skunk, nutria and armadillo. There is an open season for taking beaver with firearms or bow and arrow during any other open season for the taking of wild animals.

Check the *2010–2011 North Carolina Inland Fishing, Hunting and Trapping Regulations Digest* for bag limits and applicable maps or visit www.ncwildlife.org.

## Researchers Find Clue to Colony Collapse Disorder


WILL COOK

The sudden death of bee colonies since late 2006 across North America has stumped scientists, but a team of researchers may have found a clue to the cause of the mysterious Colony Collapse Disorder (CCD). (See "Plight of the Honeybee, Flight of the Bumblebee," Sept. 2008.)

Shan Bilimoria, a professor and molecular virologist at Texas Tech University, said the bees may be taking a one-two punch from an insect virus and a fungus, which may be causing bees to die off by the billions.

Bilimoria is part of a team of researchers searching for the cause of the collapse. Led by research professor Jerry Bromenshenk from the University of Montana in Missoula, the group also includes virologists and chemists from the U.S. Army Edgewood Chemical Biological Center and the Instituto de Ecologica AC in Mexico. Their study was published in the journal *PLoS ONE*.

"At this stage, the study is showing an association of death rates of the bees with the virus and fungus present," Bilimoria said. "Our contribution to this study confirms association. But even that doesn't prove cause and effect. Not just yet."

The mysterious colony deaths have caused major concern with scientists since much of agriculture depends on bees to pollinate crops. To discover what might be attacking bee colonies, the team ground up dead bees that had succumbed to colony collapse disorder. Using analytical equipment, researchers discovered through spectroscopic analysis evidence of a moth virus called insect iridescent virus (IIV) 6 and a fungal parasite called Nosema.

The insect virus is closely related to another virus that wiped out bee populations 20 years ago in India, he said. Also, unlike previous research that found the deaths may be caused by a virus with RNA, the IIV 6 contains DNA. "Our DNA discovery puts this field in a whole new direction," he said.

Bilimoria said Texas Tech supplied the virus material for the experiments and were tested on bees with the fungus. Though an association between exposure and death was found, scientists don't yet know if the two pathogens cause CCD or whether CCD colonies are more likely to succumb to the two pathogens. "To prove cause and effect, we will have to isolate the virus and fungus from a bee colony, and then reinfect with the same virus and fungus," Bilimoria said.

In the next part of the research project, Bilimoria will work to isolate the virus from infected bees. "Once we isolate and identify the virus, we will have a way of monitoring it," he said. "It is easier to fight the problem if we know what the culprit is."

## CALENDAR OF EVENTS

### Saturday–Sunday, December 4–5

Check out the 23rd Annual Core Sound Decoy Festival at Harkers Island Elementary School. Activities include carving competition, children's decoy painting, retriever demonstration, decoy auction, head carving contest and the world loon calling competition. Over 90 exhibitors will be displaying and selling decoys and waterfowl artifacts. Waterfowl Weekend at the Core Sound Waterfowl Museum runs concurrently with the Decoy Festival.
**Visit www.decoyguild.com and www.coresound.com.**

### Tuesday, December 14

Take a winter waterfowl tour by boat of Currituck Sound at the Outer Banks Center for Wildlife Education in Corolla.
**Visit www.ncwildlife.org** or call (252) 453-0221, ext. 3.

*Readers should check with the contact listed before traveling to an event. Items for listing should be conservation-oriented and should be submitted at least four months in advance to jim.wilson@ncwildlife.org, or call (919) 707-0177.*



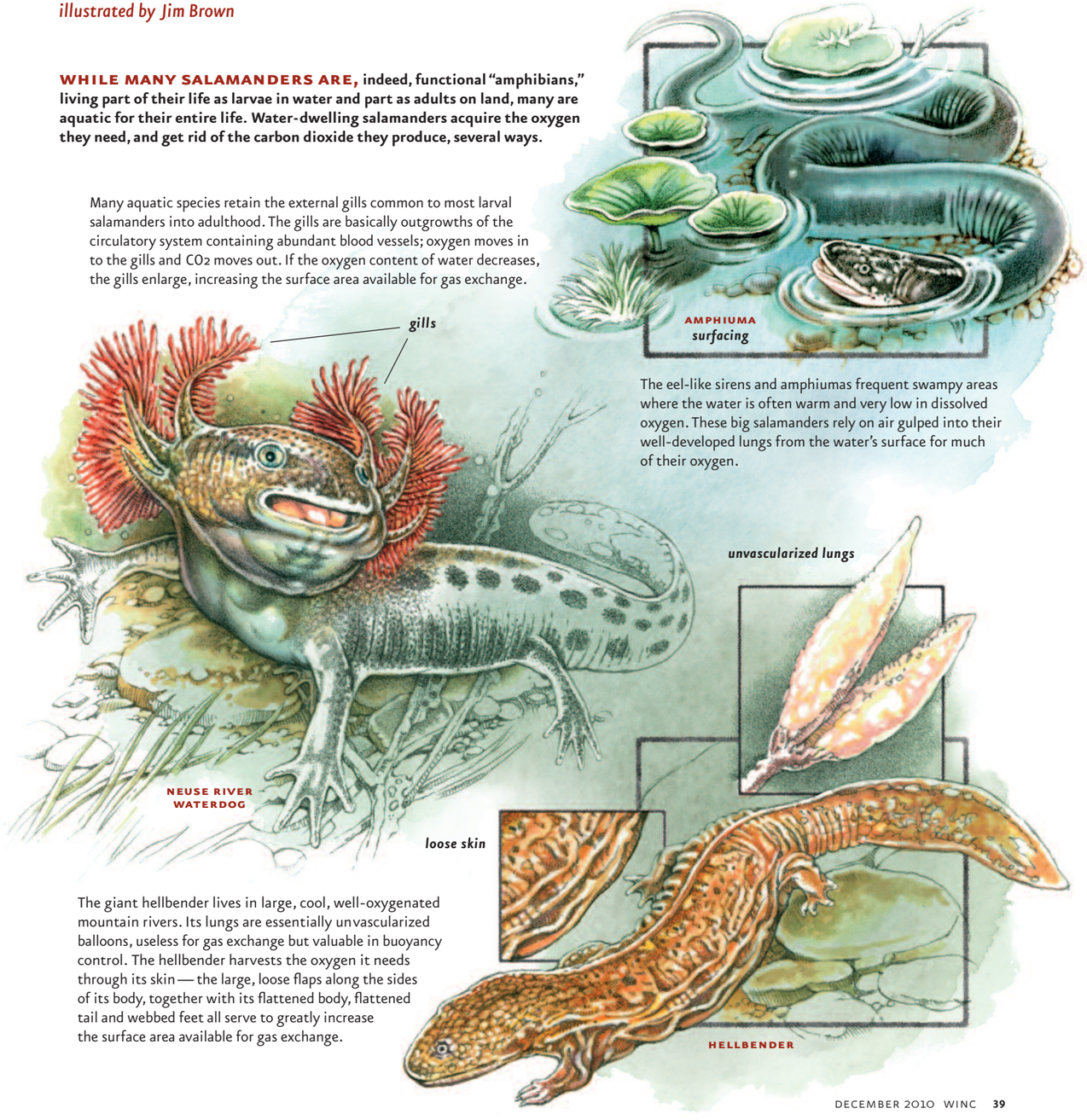


# How Do Aquatic Salamanders Respire?

*written by Clyde Sorenson*
*illustrated by Jim Brown*

**WHILE MANY SALAMANDERS ARE, indeed, functional "amphibians," living part of their life as larvae in water and part as adults on land, many are aquatic for their entire life. Water-dwelling salamanders acquire the oxygen they need, and get rid of the carbon dioxide they produce, several ways.**

Many aquatic species retain the external gills common to most larval salamanders into adulthood. The gills are basically outgrowths of the circulatory system containing abundant blood vessels; oxygen moves in to the gills and $CO_2$ moves out. If the oxygen content of water decreases, the gills enlarge, increasing the surface area available for gas exchange.




The eel-like sirens and amphiumas frequent swampy areas where the water is often warm and very low in dissolved oxygen. These big salamanders rely on air gulped into their well-developed lungs from the water's surface for much of their oxygen.

The giant hellbender lives in large, cool, well-oxygenated mountain rivers. Its lungs are essentially unvascularized balloons, useless for gas exchange but valuable in buoyancy control. The hellbender harvests the oxygen it needs through its skin — the large, loose flaps along the sides of its body, together with its flattened body, flattened tail and webbed feet all serve to greatly increase the surface area available for gas exchange.

# Who Shot Santa?

*written by Jim Dean*

ILLUSTRATION BY JACKIE PITTMAN

The scene is as clear as day in my mind, except it is certainly no later than 4:30 in the morning, with actual daybreak on this cold December morning still many hours away. My brothers Graham and John and I are actively gathered at the top of the stairs, bolting and straining like tethered hounds. Peering through the stair rails, we can see shadowy unfamiliar forms and promising glimmers of shiny things on the living room floor. "Hurry, hurry up," we clamor as Mom elbows her way past us and descends the stairs, leaving Dad standing behind with a whimsical grin.

It is all part of our Christmas morning tradition. Once the tree is lit — only the tree — we pause for the briefest moment as the shapes and sparkles are transformed below us, then we are swiftly among them, unerringly drawn to those presents Santa has left each of us. As the initial madness subsides, Mom disappears into the kitchen to make breakfast, which we devour in the midst of our sudden wealth. Only then are we allowed to open the wrapped presents under the tree, although "open" hardly befits the explosion of paper and ribbon that ensues. Finally, there is a moment of relative calm with the three of us awash to our chins in paper and treasure. Mom and Dad are sitting quietly, sipping their coffees, and exchanging bemused smiles. Outside, it is still pitch black.

*"As you might expect, I have my doubts that endless summer days spent playing cowboys or staging epic battles around tin forts have had any disagreeable impacts on our adult lives."*

Similar rituals are under way in houses all around us, or at least those where kids celebrate Christmas much the way we did in the late 1940s and '50s. We are, my brothers and me, blissfully unaware that there is any other way.

Such family traditions are still essential parts of Christmas for many of us, even though cherished participants may no longer be with us and our roles are evolving. Reflecting recently on my long memories of Christmas holidays, I am struck by significant, and not always subtle, changes. It is not merely that we are no longer children, or even still raising our own. Nor is it necessarily sad to be alone Christmas morning (no hounds are howling here at 4:30, thank goodness), and there is a fair chance that we can later join our scattered family at a civilized hour.

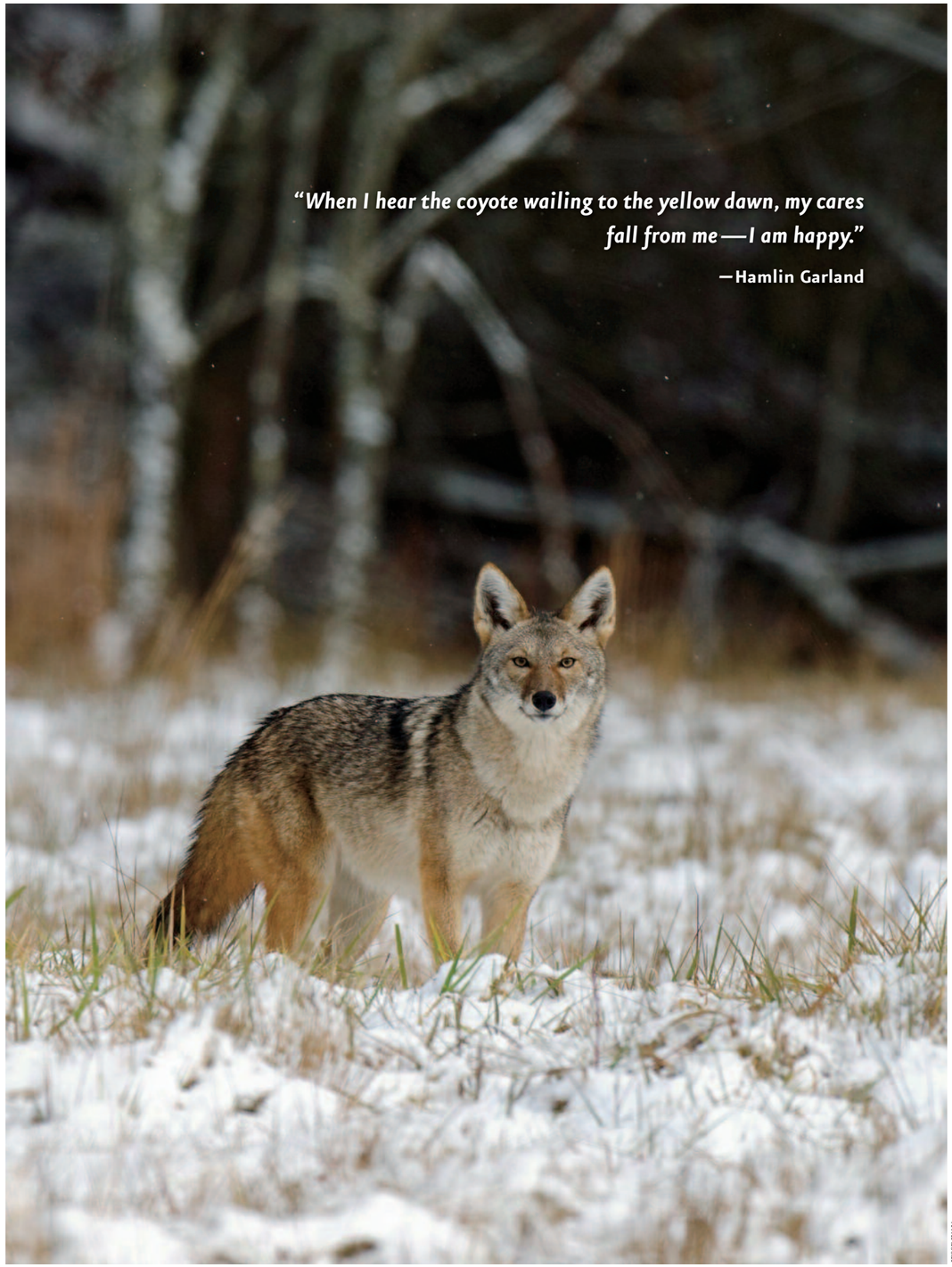
What strikes me as markedly different are the gifts, and the social baggage we now attach to some that were once so common. Bicycles and dolls still show up, but technology has bypassed Erector sets, Tinkertoys, Lincoln Logs and most board games. Cowboy outfits with twin holsters and cap pistols have virtually disappeared, along with tanks, military toys and tin Fort Apache sets with their miniature plastic cowboys and Indians. Most notably absent are real guns — that first air rifle, .22 or shotgun. The broad consensus nowadays is that these gifts celebrate violence, and send our impressionable children the wrong signal. That argument would make far more sense, however, if so many of the countless electronic games that have replaced them were not at least equally violent. Are we simply hypocrites, or is it possible that kids have never been all that easily corrupted?

As you might expect, I have my doubts that endless summer days spent playing cowboys or staging epic battles around tin forts have had any disagreeable impacts on our adult lives. Indeed, this may be what kids naturally do — have always done — and it may even serve some useful function as part of our hunter-gatherer DNA (the same combative youthful play is echoed throughout the animal kingdom). My own favorite childhood "army" consisted of a dozen threadbare teddy bears — their fur worn off during battle — that were well armed with toy guns and table-knife swords, and fiercely led by a cutthroat alter ego improbably named Cuddles.

Many would argue that real guns change this game significantly. But must they? A Santa gun back then was typically given to boys or girls only after they had demonstrated a level of budding maturity — usually at 12 or older — and the gift served as a rite of passage with some hefty strings attached. Parents and grandparents emphasized safety, and were invariably on hand to enforce it. A kid entrusted with a gun wanted above all to earn that trust, and was well aware that even the slightest infraction would cause both gun and trust to disappear. What followed were hours of instruction, happy days shooting targets, and finally a chance to actually hunt (another declining tradition) with the adults. Not only did such training greatly reduce the chance of accidents, it was far less likely to produce a citizen who had grown up to become a gun-wielding threat to society. Compare that to the haphazard way many kids and young adults are typically introduced to guns these days — and the sad results.

Ironically, when Santa was still hauling real guns in the sleigh for boys and girls with responsible parents, the world was likely a much safer place.






JESSE IVAN

*Coyote at Cataloochee*

**OUTDOOR MOMENT**